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AOR 000

From the Editor's Desk

We had a wonderful response and positive feedback to the last issue that contained Henk van den Berg's comprehensive and groundbreaking article on the cultivation of Australian *Dendrobium* hybrids. Ironically the plant we showcased on the front cover, *Dendrobium* Cosmic Gold 'Sandy' was Grand Champion at the St. Ives Orchid Fair in early August 2014 and was also awarded a First Class Certificate! So congratulations to Henk, and also to David Butler (of Green Vista Orchids) as the breeder of this outstanding hybrid. At the Show, some even suggested that some of the judges may have been influenced by the *AOR*, or wondering if maybe we have a crystal ball to pick the winner a month out from the event!

This issue continues our commitment to interesting and outstanding articles with magnificent colour photographs. We also pride ourselves on the quality of the paper used and the faithful and sharp colour reproductions. Have a glance at some other orchid periodicals and you will see the difference.

A number of prominent international and local authors have contributed to this edition. Guido Braem has written a timely note on albinism in orchids, and discusses the use and misuse of the terms *alba/album*, especially as it applies to slipper orchids. This note headlines a number of articles that discuss albino forms of species and hybrids across a few different genera.

Andy Easton shows us some of his amazing hybridising prowess within *Laeliocattleya* and *Miltoniopsis*, just to prove he does have interests outside commercial Cymbidiums. The "Rock Lily Man", Gerry Walsh shares his knowledge and images of albino forms of his beloved *Dendrobium speciosum*. Also, Bill & Jan Miles of Orchid Species Plus introduce us to a wonderful form of the seldom seen *Dendrobium trigonopus*.

One of the worlds orchid icons, Phillip Cribb shares with us his five favourite orchids. Well he tried to, but he added a few extras! Phil is a highly respected author who has published a virtual mountain of acclaimed orchid books. He is an Honorary Research Fellow at Kew. Phil always writes a good story, and this is no exception. He has been fortunate to have travelled all around the world to see some of the rarest and most spectacular orchids known to man. In retirement, I hope Phil continues to publish.

Scott Barrie from Barrita Orchids showcases the very latest in *Sarcochilus* hybrids. Some of these colours and patterns have to be seen to be believed. To see what Scott has already achieved in this genus in such a short period of time is inspirational. Also check out his complete list of registrations, and details of his upcoming Open Day at their wholesale commercial nursery.

David Jones and Lachlan Copeland describe a colourful tiny greenhood species from the Northern Tablelands of New South Wales with Bob Bates describing a miniature *Caladenia* species from southern Australia that has an interesting history. The *AOR* continues to publish the latest in Australian native orchids and their hybrids.

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Cover Shot

Paphiopedilum dianthum* forma *album is the rare albino form of this delightful slipper orchid species from southern China and northern Vietnam.

(grower & photo: Orchids Limited)

Paphiopedilum bellatulum forma *album* – a true albino, pure white, and thus correctly named. *(photo: Orchids Limited)*

Notes on Albinism

by Prof. Dr. Guido J. Braem

Albinos are "en vogue". This is true in respect to all orchid genera and especially for the slipper orchids, including the species that make up the genus *Paphiopedilum*. Whereas the general interest in the genus is not new, and was really established as early as the first half of the 19th century with the introduction of the first species into western Europe, notably Belgium and England, the special interest in albinistic forms (whether true albinos or not) is of a more recent nature.

Today, nearly all species can be obtained, either as products of artificial propagation or as wild-collected plants. The hunt for more "special" or more "rare" objects is on-going. And this is the point where the colour varieties and albinistic forms enter the scene.

Praised as especially valuable, and rated to be of "award quality" by members of the judging committees of the various orchid societies around the world, these colour varieties fetch much higher prices than do the "normal" specimens of the respective species. Although the true scientific value of these variants may well be a matter for further discussion, the commercial value is a fact that cannot be ignored. One should, however, keep in mind that only the first few plants really fetch the big money. In many cases these plants are propagated within a relatively short period of time, and seedlings (that sell for a much lower price) become quite abundant, usually within two to three years.

Since about 1970, quite a number of these colour variants have been discovered, but some have been known for a much longer time. The intensified search for new species, prompted by the augmented demand, did the rest. The overall result, as seen through the eyes of a botanist, is that a multitude of albinistic forms of *Paphiopedilum* species have become known and have been described.

It may be wise to delineate the necessary definitions here. Indeed, the terms "albino", "albus" and/or "albinistic" are not always used with the proper meaning.

Above: *Paphiopedilum delenatii* forma *albidum* – a true albino, and properly named as the entire flower is not pure white, as the staminodal shield is yellow. *(photo: Orchids Limited)*

Above: ***Paphiopedilum crossii* forma *viridiflorum*** – a true albino, and properly named, even though this colour form is generally referred to as var. *sanderae*. However the publication as "var. *viridiflorum*" by Linden has priority because it was published in 1893, thus preceding the publication as var. *sanderae* by Sander in *The Gardener's Chronicle* for 1894. *(photo: Orchids Limited)*

albino: by botanical definition, a plant that lacks the possibility to produce anthocyanin pigments. It should be noted that plants have 3 groups of pigments, being

(a) anthocyanins, responsible for the red and brown shades,
(b) carotenes, responsible for the yellow colours, and
(c) chlorophylls, responsible for the "greens".

Therefore, a plant correctly designated as an albino will not show any red or brown colour but can very well be green, yellow, white, or any combination thereof. As soon as any shade of red occurs anywhere in any part of the plant, the specimen is not an albino.

alba, album or albus (depending on the gender of the genus): a Latin word that simply means "white". This term, as far as orchids are concerned, is used in connection with the colour of the flower. Only flowers that are pure white should be designated as alba/album. "Alba/album" plants are albinos, but we have already established that albinos are not necessarily "alba/album" (see above). A quick browse through their combined awards index for 1932-1997 revealed that the judges of the American Orchid Society have awarded plants as variety *album* or forma *album* for 13 *Paphiopedilum* species. Of those 13, only three (*P. bellatulum*, *P. concolor*, and *P. niveum*) can have pure white flowers.

albinistic: a term that is used in various ways. The correct usage is for the designation of an albino or "alba/album". This term can, therefore, be used for a yellow/green/white plant or an all-white plant. Unfortunately, the term "albinistic" is often erroneously used to designate a plant that is faintly but normally coloured.

The rules of taxonomy also lack proper safety mechanisms against the misuse of the designation "alba/album/albus". A designation of a species or an infraspecific taxon, as long as it is part of a validly and effectively published concept, is to be followed, no matter how erroneous or ludicrous the designation may be. Because of this, for example, *Paphiopedilum haynaldianum* forma (or variety) *album* is the valid designation of a plant with mainly green flowers.

The taxonomic status of albino or albinistic forms is another source of disagreement and confusion. Most of these variants have been described at the level of a botanical variety. In the meantime, however, the great majority of those involved in orchid taxonomy consider colour variants - and albinos are simply colour variants - not to be worthy of the variety status. For that reason, the albinistic taxa are now generally reduced from varieties, abbreviation "var.", to forms, and designated as forma, abbreviated as "fma." ■

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Left:
Paphiopedilum superbiens* var. *curtisii* forma *sanderae
– a true albino, and properly named as dedicated to a person (Henry Frederick Conrad Sander).
This plant is without any red pigmentation.
(photo: Orchids Limited)

Right:
Paphiopedilum lawrenceanum* forma *hyeanum
– a true albino, and properly named as dedicated to a person, Jules Hye.
(photo: Orchids Limited)

Above: *Paphiopedilum venustum* forma *measuresianum* – a true albino, and properly named as dedicated to a person, Mr. Measures. There are various clones of this albino. Plants offered as albinos of this species sometimes show, although faintly, the remnants of orange to reddish or brownish pigmentation. However, only those clones lacking *any* red or brown should be accepted as albinos. *(plant: Ray Clement, photo: David Banks)*

Left:
Paphiopedilum dianthum* forma *album
– a true albino, it was described validly and effectively as forma *album*, but it isn't an album as the flower is predominantly green. However, as the description as "album" is valid according to the Rules of Nomenclature, this "non-album" is correctly to be referred to as "album". The plant and flower is without any trace of anthocyanin pigmentation.
(photo: Marriott Orchids)

Below:
Paphiopedilum haynaldianum* forma *album – a true albino. The flowers and inflorescence are uniformly bright green, with the exception of the white apices on the petals and the upper margin area of the dorsal sepal.
(plant & photo: David Banks)

Left:
Paphiopedilum esquirolei* forma *viride – The plant is not an albino, because it has a multitude of tiny brown spots on petals and sepals, and it is most certainly not an "album" because, except for the apical part of the petals, it is green. Many plants have been awarded of this colour form under the name of the related species, *Paphiopedilum hirsutissimum*. *(photo: Orchids Limited)*

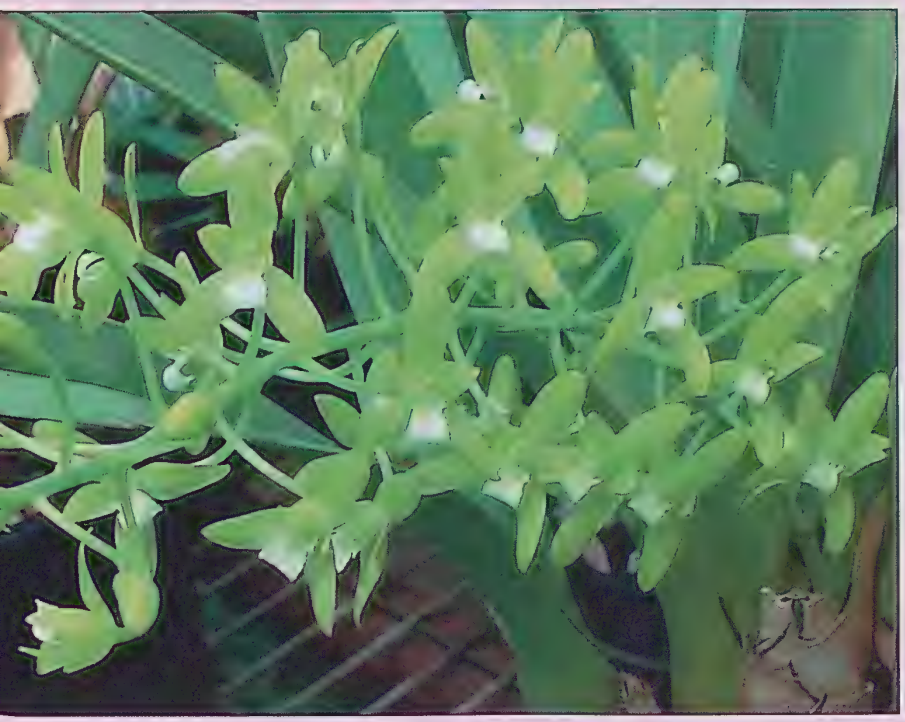
Below: *Paphiopedilum primulinum* forma *purpurascens* (left) and ***Paphiopedilum primulinum*** (right) – Ironically, the forma *purpurascens* may well be the "normal" form of *Paphiopedilum primulinum* and the plants with the yellow-green flowers may represent the albino. Unfortunately the true *Paphiopedilum primulinum* may be rarer than we think in cultivation, as albino forms of the hybrids *Paphiopedilum* Pinocchio (*glaucophyllum* x *primulinum*) and *Paphiopedilum* Avalon Mist (*primulinum* x Pinocchio) are often mistaken as robust forms of the species. *(plants: Andy's Orchids, photo: David Banks)*

Left:
Phragmipedium besseae* forma *flavum – a true albino, properly named ("*flavum*" = yellow).
(photo: Orchids Limited)

Below:
Phragmipedium longifolium* forma *album – a true albino, but not even predominantly white. Thus the designation is erroneous and confusing.
(photo: Orchids Limited)

Above: *Cypripedium japonicum* forma *album* – this beautiful albino is an excellent example of a plant that is often erroneously referred to as "alba". However, only the pouch is pure white. The sepals and petals are green. Therefore, proper designations for this form would be "albino", "semi-alba", "alboviride", or even a name honouring a person. *(photo: Tom Velardi)*

Below: *Cymbidium canaliculatum* forma *viridiflorum* – is the correct name for the albino form of this species, with green to yellowish blooms with a pure white labellum. A pure white form is not known. *(plant & photo: Roger Herraman)*



Above: ***Cattleya violacea*** **"forma *semialba*" 'Icabaru'** AM/SOEM – is an interesting and unique form of the species, however it is neither a semi-alba nor an albino of any kind, but merely an aberrant colour form. *(photo: Orchids Limited)*

A New Albino *Laeliocattleya* Hybrid

by Andy Easton

(*Cattleya* Atalanta x *Laelia* Pulcherrima) 'Salinas' 4n

We still do some work with the *Cattleya* Alliance. Usually it will involve revisiting old hybrids and bumping them up to tetraploid forms.

This one was something we made in Florida in 2001. *Cattleya* Atalanta was remade by us in an *alba* version, the cross being *Cattleya guttata* forma *alba* 'Bracey's' x *Cattleya warscewiczii* forma *alba* 'Firmin Lambeau'. The seed was given to Stewarts Orchids in the 1970's and nobody was treating many diploid crosses with colchicine in those days. When the plants were approaching maturity, it was obvious they were all albas as had been predicted by a very clever *Cattleya* expert, Carson Whitlow. I was moving to New Zealand so I just took a couple of seedlings and shared some with Miyamoto in Hawaii as well.

When my seedlings bloomed they were stunning, huge heads of up to 13 blooms that opened an ice green and faded to white. Soon they were also blooming at Stewarts and customers went after them very enthusiastically. Hitting right in middle summer with heavy fragrance, they were quite popular.

We also had at Geyserland Orchids in New Zealand, Ned Nash's hybrid of *Laelia* Pulcherrima, remade with both an *alba* form of *Laelia purpurata* and an *alba* of *Laelia lobata*. *Laelia* Pulcherrima was a Sander's hybrid, first registered in 1898, in a coloured form. Today, it is rare in either form, and the alba clone of *Laelia* Pulcherrima we used was a superb diploid with notable vigour.

As the hybrid was genetically diploid, we treated the seed with colchicine and ended up with good diploids and tetraploids though by now only the tetraploids have been retained. Plant habit is quite modest and they will bloom from June into late August (in the Northern Hemisphere). We have been using them with our tetraploid *Laeliocattleya* Luminosa (*Laelia tenebrosa* x *Cattleya dowiana*) selections just to see what type of yellows we might create.

That's the wonderful thing about hybridising, one cross leads to another and before you know it, you're a hundred years old!

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(*Cattleya* Atalanta x *Laelia Pulcherrima*) 'Salinas' 4n

Albino *Dendrobium speciosum*

by Gerry Walsh

Albinism in the plant kingdom is not uncommon. The family Orchidaceae is no exception. Because of the intense interest in this family of plants that we all love and aspire to grow, these rare albino forms are much sort after. They gain much attention when the occasional new colour, or combination of colours, appear from time to time. The development of new and impressive orchid colours is often associated with the use of albino forms of the species in the family tree thereof.

Technically, to be an albino, a species must have no other colour apart from white, yellow or green. The plant and flower must not have any anthocyanin pigment. Many an orchid may appear to be an albino but are usually just snowy white in colour. If there are a few spots of colour somewhere on the labellum then it is not a true albino. It may be called an 'alba', but no way can it be classified as an albino.

My favourite plant and orchid species is *Dendrobium speciosum* and I have been living and breathing the "Rock Lily" all my life. They range in colour from snow white to deep yellows and every shade in between. However, until recently, albino speciosums were virtually non-existent.

The late and great native orchid hybridist, Sid Batchelor of Yondi Orchids fame, pleaded with me back in the 1980s to find him an albino *speciosum*. I don't pretend to understand the science behind what an albino can do to a colour scheme in an orchid. But Sid reckoned he could do magic things if he could just find some pollen from a true albino.

Luckily for Sid, a year or so later, I found an albino *speciosum* in the wilds of the Central Coast of New South Wales. Sid was all smiles when I presented him with a piece of the plant and a flower spike for his pleasure. When Sid passed away in 2000 his collection was dispersed and the piece later died for the new owner. Fortunately I kept a piece for myself and the gene pool was not lost.

The late Wal Upton had a plant that was collected in the late 70s at Bucketty, near the Hunter River, which was an albino and it was christened 'Purity' by the group of growers who found it. Wayne Turville of Australian Orchid Nursery had a piece labelled as 'Purity' and pronounced that it was not an albino as he found purple spotting down at the base of the Labellum. The plant may have been wrongly labelled and the true origin lost as pieces were scattered between growers.

***Dendrobium speciosum* forma *album* 'Lyrebird'**

Dendrobium speciosum
forma *album*
'Lyrebird'

Dendrobium speciosum
forma *album*
'Lyrebird'

I know of only three true albino variety speciosums, apart from 'Purity' (which I have not yet seen in flower). In 1997 during a trip to a two kilometre long cliff line on the Central Coast, a friend and I were rewarded in finding three clones of true albino *speciosum*. We named them 'Lyrebird', '97 Albino' and 'The Virgin'.

I know of no other albinos having been found in var. *speciosum*. There is a very beautiful form of variety *hillii* known as simply 'Alba' HCC/ANOS. It is a lovely one and it is a magic sight to see it in full swing each spring. David Banks also has an albino variety *hillii* from the Toowoomba region in Queensland, which was originally collected over 25 years ago by Dean Feldman.

In 1996 I was given a few pieces of variety *capricornicum* from the Rockhampton region of Queensland. One of those turned out to be an albino as well. The guy who gave it to me had not seen the flowers before parting with it. I suspect he was disgusted with himself when I told him of his mistake. However, he maintained a brave front! Later on when I divided the sole specimen, I passed a piece of it back to him... and I was mighty happy to be able to do so.

Dendrobium speciosum forma *album* '97 Albino'

Dendrobium speciosum
'The Virgin'

Dendrobium speciosum
'The Virgin'

Dendrobium speciosum
var. *capricornicum*
'Hedlow Albino'

I have not heard of an albino form having been found in any other variety of *speciosum*. There may be some around however. It is something that is not readily apparent unless a pair of well-trained eyes have scrutinised a plant. To summarise, that makes only a total of six albino speciosums ever found. If you have seen one then I would be delighted to hear about it.

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Miltoniopsis Bleuana 'Alba 4n'

An Albino form of *Miltoniopsis* Bleuana

by Andy Easton

It's not often one can remake a hybrid 125 years old and come up with something new and interesting. According to *The Orchid Grower's Manual* (Williams), this primary *Miltoniopsis*, the cross between *Miltoniopsis roezlii* and *Miltoniopsis vexillaria* was first shown by Mr. Alfred Bleu in Brussels in 1889. Just a little before my time!

I was at Colomborquideas a couple of years ago and the *alba* form of both these plants were in bloom. Seemed like a cross a dummy might repeat. I wondered if the characteristic lilac "eyes" that mark *Miltoniopsis roezlii* and its hybrids, might appear as yellow in the *alba* version. The pod was full of seed and ended up in Berkeley where Bob Hamilton sowed the seed and of course treated it with oryzalin. Lots of treated material was returned to Colombia and with my encouragement, was also shared with several other *Miltoniopsis* enthusiasts.

We grew out just one flask and recently potted them up to 75mm (3 inch) pots. I tried to segregate the seedlings into diploids and tetraploids based on root diameter and while potting them up, I was delighted to see that one of the putative tetraploids had a small spike on its first bulb. The spike extended with three buds and popped open, literally just hours before I was to leave for the show in Medellin in August 2014.

The seedling that bloomed seemed to be indeed doubled ploidy. It was pure white with a yellow mask but sadly no yellow eyes at the petal bases. Oh well, we can't get everything we want!

One little note of caution about *Miltoniopsis* Bleuana in its normal colour form. For many years there has been a *Miltoniopsis* in circulation known as *Miltoniopsis vexillaria* 'Arctic Moon'. It was originally marketed by the Rod McLellan Company and was even converted to a tetraploid form. In fact, the said orchid is actually a *Miltoniopsis* Bleuana that was mislabelled. It is actually a very fine thing and we have used it in some hybrids but under its correct hybrid name. ■

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Dendrobium trigonopus

Dendrobium trigonopus

by Bill and Jan Miles

We quite enjoy importing orchid species, especially when there is something new or unusual in the offering. Sometimes it's a bit of a lottery regarding the names on the plants themselves, but at least we are getting new genetic material into Australia.

A few years ago we imported a batch of *Dendrobium* species from northern Thailand that had come across from Laos. Amongst them were some of the largest and most robust examples of *Dendrobium trigonopus* that we have seen. Our supplier told us that they were growing at about 1000m elevation with a number of other *Dendrobium* species, including *Dendrobium bellatulum, Dendrobium scabrilingue, Dendrobium transparens* and *Dendrobium unicum*.

Most of the shipment survived quarantine, and we were pleased with the plants progress. We also use the growth formula "Multicrop Plant Starter" at the rate of 1ml per 1 litre to encourage root growth in particular.

Upon blooming, this batch of *Dendrobium trigonopus* was quite uniform in plant habit and flower size and quality. This is such a wonderful species with its bright greenish-yellow heavily waxy flowers. These have been vigorous growers producing flowers much larger than we had previously seen in this species.

Cultivation: We have found this species does not perform well in pots, perhaps it doesn't like its roots being covered. Our plants are all mounted on either virgin cork bark or large pieces of weathered radiata pinebark, performing better on the latter. Our plants are in a glasshouse that gets winter minimums of 12°C and up to 32°C in summer.

We have recently deflasked seedlings that we plan to release in spring 2015. ■

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Above: *Dendrobium trigonopus*

Below: *Dendrobium trigonopus* and Bill Miles

Ophrys insectifera
– The Fly Orchid

My Five Favourite Orchids... (just five of many!)

Text and photos by Phillip Cribb

Having travelled the world orchid hunting for over 40 years since my first expedition in 1970-71, selecting five favourite orchids is far from easy. It reminds me of 'Desert Island Discs', the well-known BBC radio programme: every time I have tried to narrow down my choices to eight (the number allowed) I get stuck at about 25 (fortunately, I have never been asked to participate!).

Nevertheless, I will endeavour to select five orchids that I cherish or have impressed me. The easiest way to narrow down the field is to adopt a geographical method and to select an orchid from each of the major regions of the world, starting with Europe.

Like many botanists, I gained my appetite for nature at the side of my father and grandfather, both keen and knowledgeable amateur naturalists, my father specialising in butterflies and moths, and my grandfather in beetles. However, both knew their plants and, being young, I was like a sponge hoovering up the identifications they casually made as we wandered across the Downs or in the Wealden woodlands of Sussex where we lived. I had seen most British orchids by the time I was ten and could identify the early purple orchid, common spotted orchid and bee orchid with ease. However, the orchid that caught my fancy because it was so cryptic yet marvellous when eventually located was the Fly Orchid, ***Ophrys insectifera***. It grows in the woods and copses on the chalk of Southern England, never common but often found in small colonies. It flowers in late May and early June and seldom bears more than ten small flowers of which two or three are fresh at any one time. The sepals are green and the petals small and antenna-like but the lip is velvety with a glossy blue speculum and remarkably fly- or bee-like in shape and texture. I choose it here because it was one of the orchids that inspired Charles Darwin's classical study of orchid pollination that was published in 1862 as *On the various contrivances by which British and foreign orchids are fertilised*. Six years ago I went to Down in Kent with Steve Hopper, shortly after he was appointed Director of Kew, and we found the fly orchid still flowering on Darwin's orchid bank, a ten-minute walk from his house.

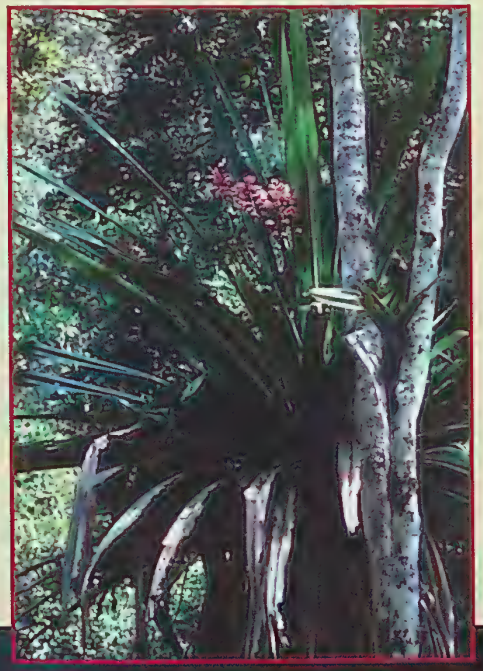
My first expedition for Kew in 1976 was to East Africa as part of completing the orchid accounts for the *Flora of Tropical East Africa*. I retain fond memories of that trip, although a second expedition in 1979 was more difficult because of the lack of food (the markets were closed because of cholera). On the Kenya coast, I was trying to dislodge a leopard orchid (*Ansellia africana*) from a doum palm but only managed to antagonise a green mamba which sailed over my head, missing my back by a couple of centimetres. Close encounters in Tanzania with cobra, baboon and lion only added to my relief at survival. Nevertheless, the two expeditions were memorable and several novelties were discovered, including four new species of *Stolzia*, and a new *Holothrix* and *Tridactyle*.

Left: Darwin's orchid bank, Down Kent

However, from this region, I am going to select a spectacular Madagascan orchid, the remarkable ***Eulophiella roempleriana***. It is a strange orchid in that its seed germinates below the crown of screw pine trees (*Pandanus*). At first its seedling hangs below the screw-pine crown but, as it develops, its rhizomes wind around through its leaf bases until the mature growths sit on top of the screw pine's canopy. There they flower, producing tall inflorescences over a metre long, bearing a number of large bright pink flowers that attract large carpenter bees as pollinators.

I found my first plants in swamp forest near Andasibe in the eastern montane rain forest of Madagascar and later to the south in Ranomafana in similar conditions. However, I also came across it at sea level on Ile Ste Marie, the pirates' island off the north-east coast. There it grew with the equally amazing green-flowered *Cymbidiella falcigera*.

Above: *Eulophiella roempleriana*



Left: *Eulophiella roempleriana* in *Pandanus*

Below: *Cymbidiella falcigera*

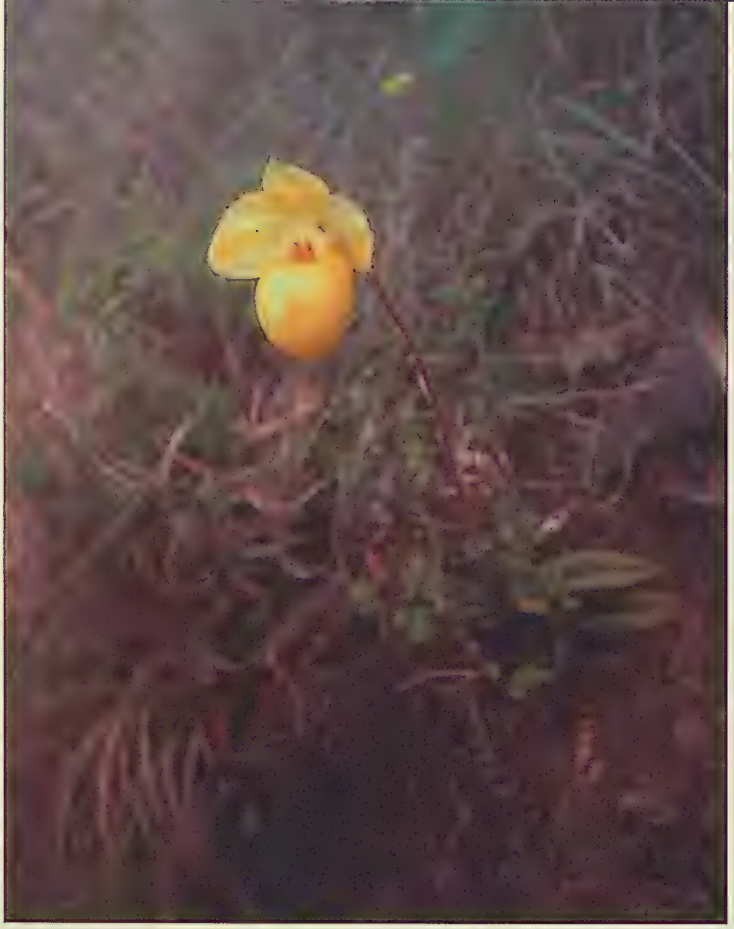
I have taken part in numerous expeditions in south-eastern and eastern Asia and must admit that I have a very soft spot for western China where so many plants that are familiar in English gardens originate. I participated in a number of expeditions to the limestone pinnacles of the karst regions of southern China that were particularly memorable. Climbing 1500 metre pinnacles without any climbing gear was a challenge but a rewarding one. With colleagues from the Chinese Academy of Science, I explored many areas in southern Yunnan, Guizhou and Guangxi looking for *Paphiopedilum* and cymbidiums. Of the many possible choices for the sensational orchid flora from this region, I choose ***Paphiopedilum armeniacum***, the golden slipper orchid of Yunnan. I well remember the first time it was exhibited in California in 1982 and a couple of years later in London where the judges gasped in amazement at its pure colour. I have found it several times in western China in the Nushan Mountains not far from the Burmese border and once further east. It grows on steep slopes on limestone in light shade at over 2000 m elevation, and must be one of the hardiest species in the genus. I saw several colonies on three expeditions in the 1990s before stumbling upon one where the plants were in full flower. This site, on a rocky cliff face where the forest cover of wild magnolia had been severely cut, was a difficult place to scramble around but the crevices below the rim held several plants in flower – a rewarding end to a hard search.

Above: Guangxi in China

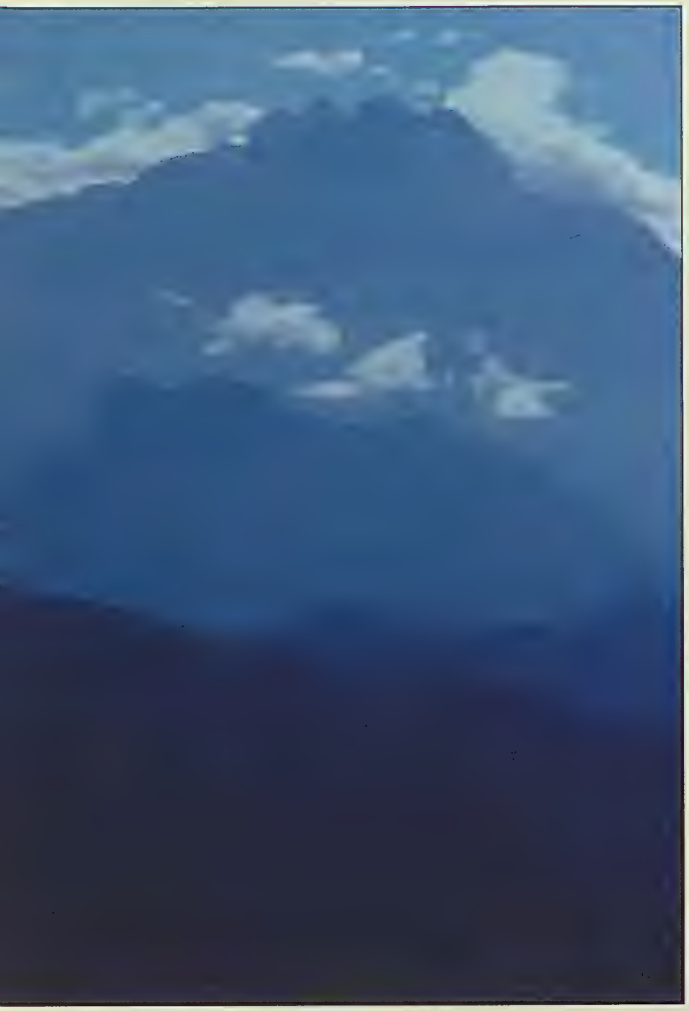
Below: ***Paphiopedilum armeniacum*** *in situ* West Yunnan China on rocks

Below: ***Paphiopedilum armeniacum*** *in situ* West Yunnan China

Above:
Paphiopedilum armeniacum
West Yunnan
China



Right:
Paphiopedilum armeniacum *in situ*
West Yunnan
China



Above: Mount Kinabalu, Sabah (Borneo)

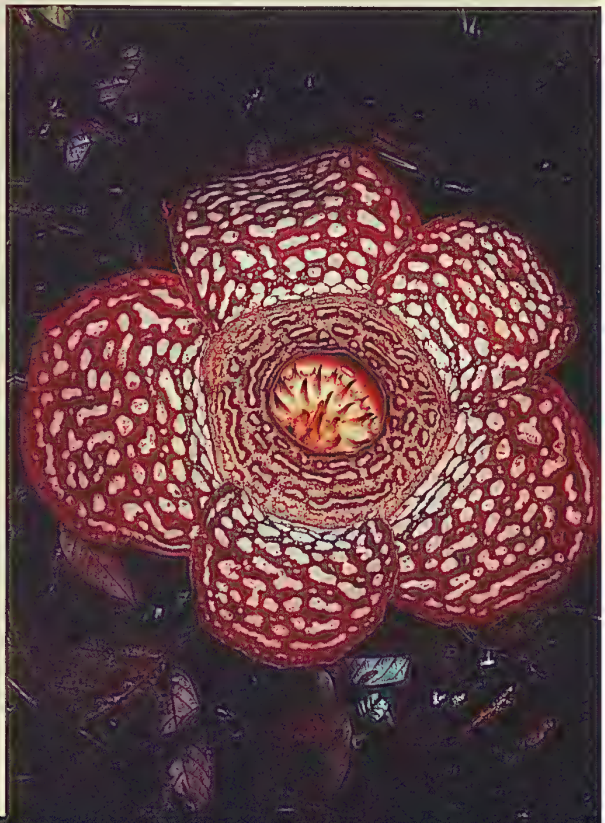
Above: Mount Kinabalu in the distance

It would be remiss of me not to include at least one orchid from South-east Asia. I have spent several exhilarating expeditions climbing mountains in Thailand, Malaya, Java, Borneo and New Guinea and have seen some beautiful orchids. However, in 1983, I was with Chris Bailes and Tony Lamb when we visited a colony of *Paphiopedilum rothschildianum* that is now exterminated. The area was within the Kinabalu Park but was degazetted at about that time for farming, a singularly silly decision as the soils were ultramafic and unsuitable for crops, apart from being precipitous. Although not the largest flowers for the species (those come from the Penataran River on Kinabalu), the sight of many plants in full flower, growing on shallow shelves on a steep wooded cliff, was unforgettable. Climbing to see them was difficult as the soil crumbled at every step and the rocky river bed was a long way below us. Nevertheless, during the scramble we also saw *Renanthera bella*, *Dimorphorchis rossii* and *Paphiopedilum hookerae* var. *volonteanum*.

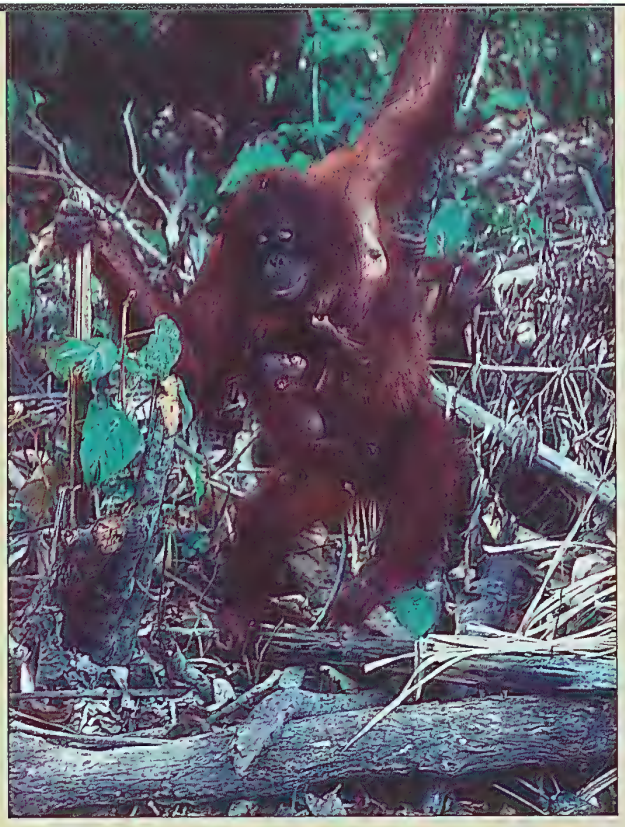
In the 1980s, with Hermon Slade and Alasdair Morrison's help, I took part in three expeditions to the south-western Pacific Islands of Bougainville, the Solomon Islands, Vanuatu and New Caledonia as part of a project to catalogue the orchid flora of the Pacific Island archipelagos. At the time, I was particularly interested in *Latouria* and *Spatulata* ("Ceratobium") dendrobiums of which we saw plenty. I was able to sort out the nomenclature of some troublesome herbarium specimens that proved to be hybrids (obvious in the field but less so in the herbarium). A visit to the remote island of Rennell in the Solomons proved to be a highlight of one trip. The island is an extensive raised coral atoll with a large 20 kilometre long lagoon at its heart. We had a memorable journey to the lake, flying in by small plane from Honiara, and then taking the island's only transport (tractor and trailer) to the coast. The following morning we travelled by canoe to a beach two bays beyond, but it proved to be a horrendous journey because a storm blew up when we were outside the reef. We survived and then had to climb a 150 m high cliff before a short walk led us to the lagoon and our hut for the next few days. During the war the lagoon had been used by the Americans as a base for flying boats, and a couple could still be seen where the Japanese had sunk them many years earlier.

Above: ***Paphiopedilum rothschildianum*** *in situ* Mount Kinabalu

Above: ***Paphiopedilum rothschildianum***



Right: ***Rafflesia pricei*** – not an orchid, but one of the largest flowers in the world, *in situ* Mount Kinabalu



Above: Orang-utans – from northern Borneo

Above: Rennell Island - east coast

The following morning we hired a canoe for a trip across the lagoon, cruising above the ghosts of the sunken planes to the southern end of the island. On coral atolls in the lake we found colonies of the spectacular white-flowered endemic orchid ***Dendrobium rennellii*** which I had described only a few months beforehand.

In 1983, I joined an expedition to northern Cape York, North Queensland led by Bill Lavarack (with David Jones, Ben Wallace, Neville Howcroft and Bruce Gray inter alia). We found plenty of orchids, including the recently described *Dendrobium carronii*. However, the orchid I best remember was *Habenaria maccraithii*, a somewhat nondescript and then undescribed species but a thoroughly memorable one. On seeing it for the first time, I made the mistake of rushing over to get a better view. I was wearing shorts and ran through a stinging tree which lashed the backs of my legs. I cannot recall ever being in such agony which lasted for hours, indeed days afterwards. My companions thought it was hilarious, for which I am only now prepared to forgive them! Altogether, it was a very memorable orchid.

Dendrobium rennellii

***Habenaria macraithii* (photo: Bill Lavarack)**

***Dendrobium carronii* (photo: Bill Lavarack)**

Undoubtedly, one of the most thrilling highlights of my entire orchid career was seeing ***Phragmipedium kovachii*** in the wild in northern Peru. En route from southern Ecuador (courtesy of Ecuagenera and Pepe Portilla), we crossed the dry valley of the great Marañon River, where wild purple-flowered *Bougainvillea* scrambled over the roadside trees and shrubs. Further south we drove into the mountains then turned east through country inhabited in pre-Colombian times by the Chachapoyas people who withstood the attacks of the Incas until shortly before Pizzarro's invasion. The montane forests of the Andes have suffered badly from shifting cultivation as people from the highlands move along the roads that lead down into the Amazon basin. However, in the mist zone around 2000 metres elevation, the forests survive mainly on ridges and along the deep valleys that run into the Andes chain. In one of these we left the road on foot for a six-hour hike to a site where *Phragmipedium kovachii* had survived the predations of collectors. The track ran through forest with plenty of orchids, many Pleurothallids and plants of *Maxillaria*, *Lycaste* and other genera. The beautiful scarlet cock of the rock and golden quetzal were spotted calling in the trees and beautiful butterflies fringed every puddle. However, the track was long and rough and we had to ford several mountain rivers before we arrived at a sheer slippery forested cliff. A couple of hundred metres or so above we found it and, furthermore, several plants were in flower, mostly high above us but one plant was close enough for us to take good photographs of its spectacular purple blossom. One flower was measured at over 21cm across the petals, an amazing sight. One of my companions was so moved by the experience that, on returning home, he had a flower of *Phragmipedium kovachii* tattooed on his arm!

Well, I seem to have reached my stipulated number of five outstanding orchids and I have not even mentioned the Lady's Slipper *Cypripedium calceolus*, Britain's rarest plant, the eastern Australian underground orchid *Rhizanthella slateri* which Mark Clements kindly showed me some years ago, and the weird Chinese spotted-leaved slipper orchid *Cypripedium lichiangense* which my wife discovered in western China. Do I really have to stop at five?

Phillip Cribb
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Left: East Andes in Northern Peru

Phragmipedium kovachii **flowering *in situ*, northern Peru**

Above:
Phragmipedium kovachii

Left:
Cypripedium calceolus
– The Lady's Slipper, Britain's rarest plant


Cypripedium lichiangense
from western China

Durabaculum undulatum – typical form from Port Moresby region

Variation within *Durabaculum undulatum* from Papua New Guinea

Text and photos by David Banks

I was delighted and honoured to accept an invitation from the President of the Orchid Society of Papua New Guinea, Justin Tkatchenko BEM OL, to be the Head Judge at their 8th International Orchid Show held in Port Moresby 21-25 July 2011. Justin organised all the logistics of my trip, including sponsorship from Air Niugini, Ela Beach Hotel & Apartments – Port Moresby, PNG Gardener, OSPNG and the National Parliament of Papua New Guinea. Justin is even busier these days as he is now a MP in the PNG Parliament, and is their Minister for Sports, National Events and Pacific Games 2015.

Thanks to Justin, here was an opportunity to visit our nearest neighbour, and hopefully to see a cross-section of its wonderful unique orchid flora, plus many of the lowland species shared with northern Australia.

In five days I was fortunate to see some wonderful endemic species on display at the Show, as well as different forms and varieties of orchids I was already most familiar with. I also was given personalised tours of the three largest orchid collections in lowland Papua New Guinea, including the National Orchid Garden. This popular tourist attraction is opened to the public and is a joint initiative (driven by Justin) between the Orchid Society of Papua New Guinea with promotion from the PNG Government. One of the highlights of the trip was an excursion to the Varirata National Park where we saw well over a dozen orchid species in a ravine that was home to the enigmatic *Bulbophyllum fletcherianum*.

For years the "Golden Orchid" of North Queensland has been well known as *Dendrobium discolor*. Within *Dendrobium* it was placed in the Section *Spatulata* (syn. Section *Ceratobium*) and known to generations of orchid growers under the grab-bag of "hardcane dendrobes".

The Type of the genus *Dendrobium* is the "softcane" species *Dendrobium moniliforme* primarily from east Asia. Amazingly, in light of the nomenclatural upheaval and inconsistencies

we are currently witnessing in global orchid taxonomy, there are still those who maintain that *Dendrobium* is monophyletic (one common ancestral species). It may surprise readers that the only two morphological features that currently hold *Dendrobium* together is 1. Flowers having a mentum (a chin-like projection at the back of the bloom, consisting of the bases of the lateral sepals and the column foot) and 2. Four waxy pollinia. Yes, that's it!

A growing number of learned orchid enthusiasts are now starting to embrace the "new orchid taxonomy" that was proposed by the forward-thinking Australian botanical scientists Clements & Jones over a decade ago. What was initially considered controversial is now starting to make sense to many who seriously study these different groups of orchids. The major turn-off for so many is firstly pure resistance to change, and secondly the thought of having to learn so many new names!

For decades, orchidists have been happy using generic names of *Dendrobium* relatives such as *Cadetia*, *Diplocaulobium*, *Epigeneium* and *Flickingeria*. In recent times the genus *Dockrillia* has developed a strong acceptance and understanding. These pencil orchids are just so different to true Dendrobiums, for starters they don't even have pseudobulbs!

In a 2002 issue of *The Orchadian*, Mark Clements and David Jones reclassified *Dendrobium discolor* as *Durabaculum undulatum*. There are now 50 species that have been reclassified as *Durabaculum*.

There is amazing variation within *Durabaculum undulatum* in Papua New Guinea, in plant habit, floral structure (especially labellum shape and size) and colour of the blooms. In north-eastern Australia the flowers generally range in colour from dark glossy brown through orange-tans to greenish yellow (in the albino form often referred to as variety or forma *broomfieldii*). They make great garden plants for the lowland tropics, grown in full sun.

Some of the Papua New Guinea forms have shades of cream to mustard, through golds to pinks and purple tints. Most of these unusual colour forms are from the Bensbach River region of southern PNG (which isn't that far as the crow flies from the tip of Cape York, North Queensland). There is much variation in the size of the blooms between plants, plus the width of the segments and the amount of twisting of the floral segments.

Most of the various forms do grow into quite large plants, yet a compact squat growing form was being propagated at the National Orchid Garden that I am sure would become popular in cultivation around the world should seed or flasks become available.

I was fortunate to see many dozens of different clones of *Durabaculum undulatum* in full bloom at the Show, the National Orchid Garden (Hubert Murray Highway, 14 Mile, Port Moresby) and in the well-tendered and extensive private collections of Steve Kami and Godfrey Seeto. Thanks also to Jacque Ware and Rocky Roe for providing photographs taken in the wild from their recent expedition to Bensbach River.

Durabaculum undulatum is a most impressive orchid species, yet one I feel many orchid enthusiasts have taken for granted when bored with the golden-brown tones. These new colours certainly increased my interest in this group of unique orchids, and I am sure they would become popular with species orchid enthusiasts and budding hybridists.

It was worth the trip to Papua New Guinea, just to see this species alone. I thank Justin, Jacque, Godfrey, Steve and the members of the OSPNG for this opportunity and their outstanding hospitality and friendship.

David Banks
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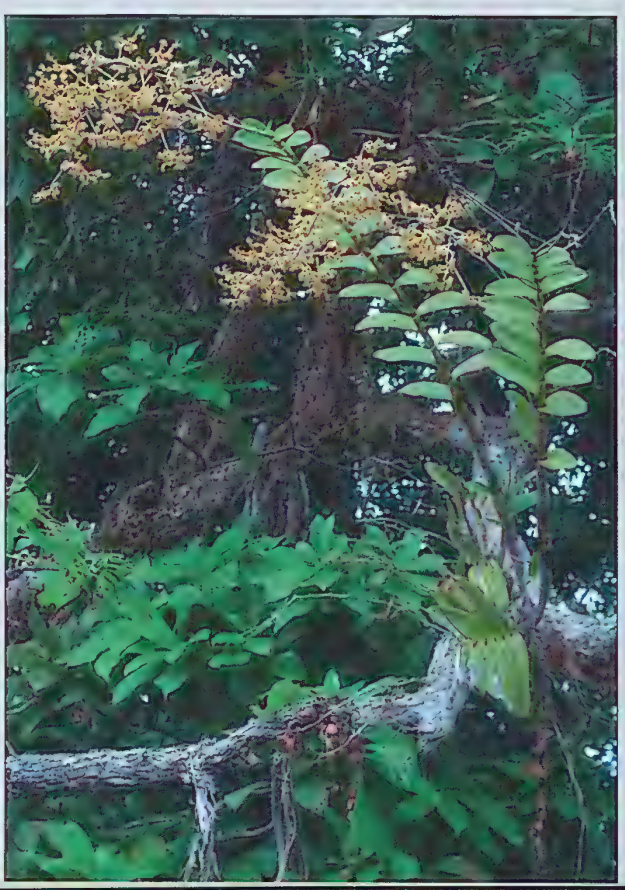
Left: *Durabaculum undulatum* – totem of various forms at the PNG International Orchid Spectacular, held at Parliament House, Port Moresby

Above: *Durabaculum undulatum* – plants *in situ* Bensbach River, note plants in bloom high in mangroves, always with high humidity! *(photo: Jacque Ware)*

Below left and right: *Durabaculum undulatum* – plant *in situ* Bensbach River *(photos: Jacque Ware)*



Above: *Durabaculum undulatum* – from the Bensbach River, this form has amazing broad side-lobes to the labellum *(photo: Jacque Ware)*

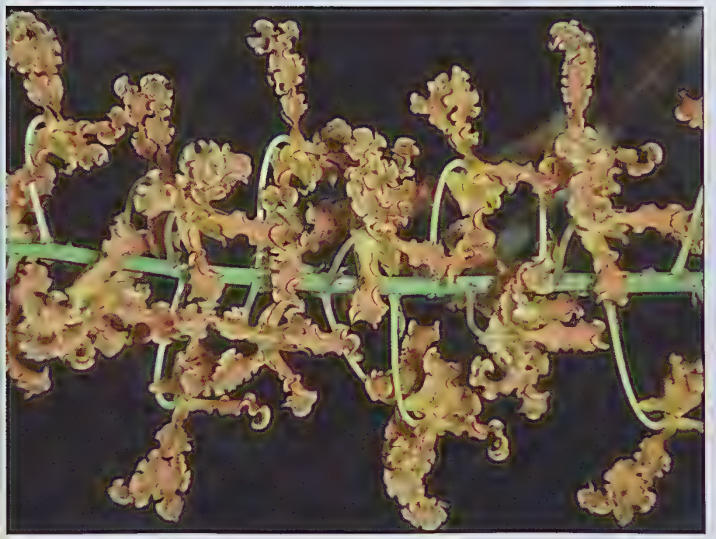
Left: *Durabaculum undulatum* – the very rare "pink" form

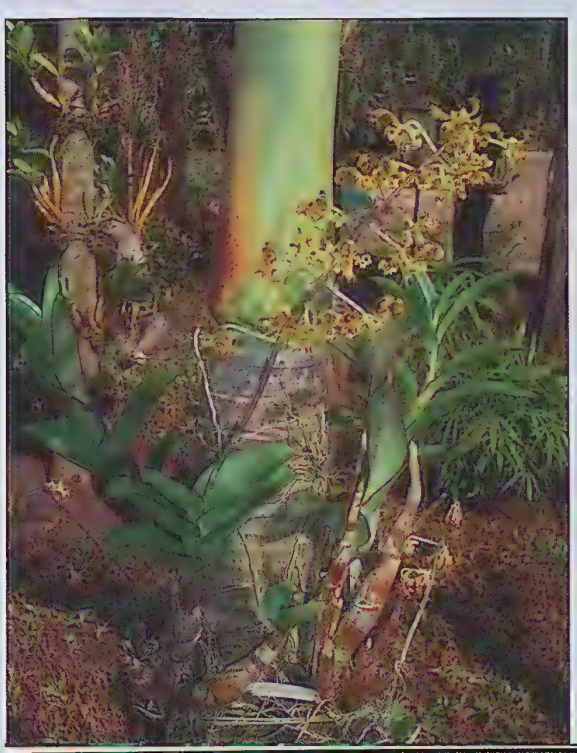
Above: ***Durabaculum undulatum*** – from the Port Moresby region

Below: ***Durabaculum undulatum*** – the distinctive small-flowered form known as 'Rigo Twist', the flowers are poorly displayed on this cultivar

Above: ***Durabaculum undulatum*** – from the Bensbach River

Below: ***Durabaculum undulatum*** – close up of 'Rigo Twist'



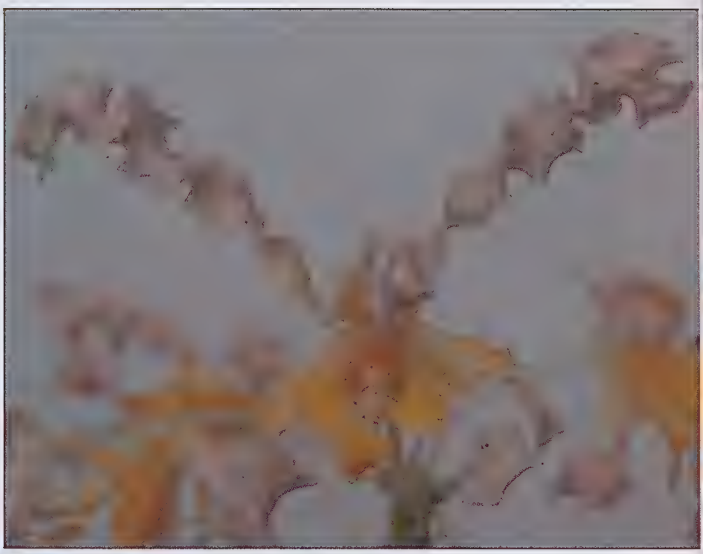


Above: ***Durabaculum undulatum*** – close up of the compact squat form

Left: ***Durabaculum undulatum*** – flowering plants of the compact squat form

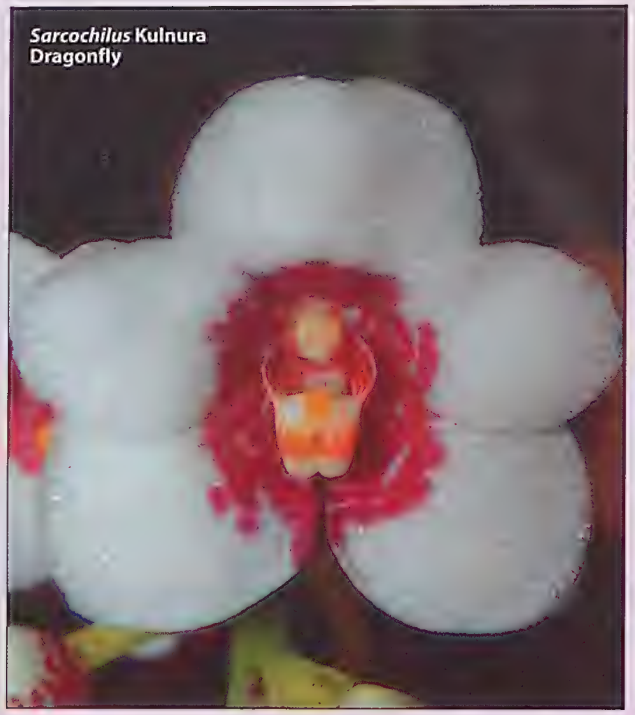
Above: *Durabaculum undulatum* – purplish form from Bensbach River *(photo: Rocky Roe)*

Below: *Durabaculum undulatum* – golden form from Bensbach River *(photo: Rocky Roe)*

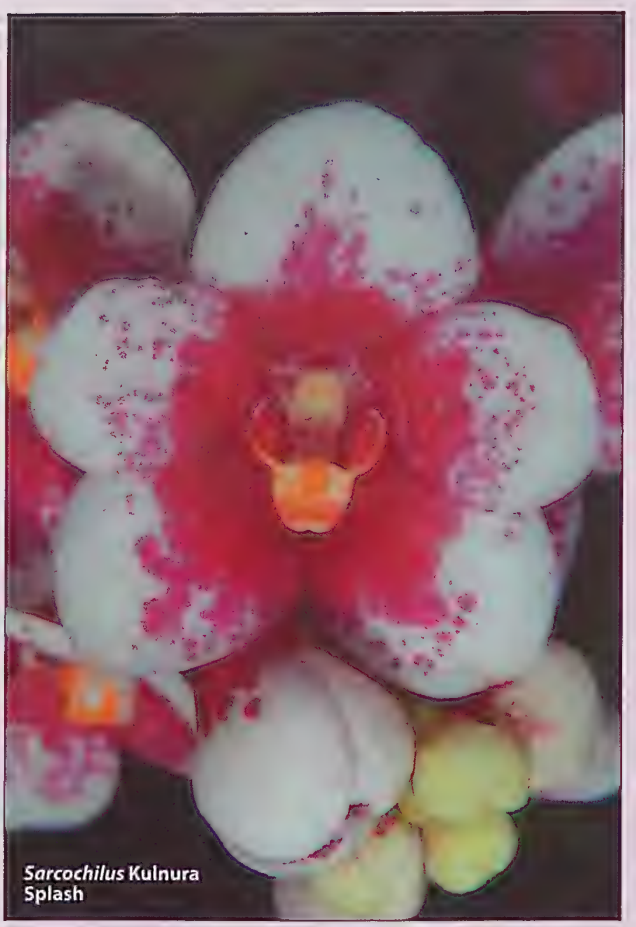


Above: *Durabaculum undulatum* – twisted creamish form from Bensbach River *(photo: Rocky Roe)*

Below: *Durabaculum undulatum* – upright creamish-white form from Bensbach River *(photo: Rocky Roe)*



Sarcochilus Kulnura Dragonfly



Sarcochilus Kulnura Splash

Sarcochilus Kulnura Spice

Sarcochilus Kulnura Firemist

New *Sarcochilus* Hybrids from Barrita Orchids

Text by Scott Barrie, photos by David Banks

We have just registered a new block of *Sarcochilus* hybrids with the Royal Horticultural Society in England. I have included a full list of these hybrids in this issue of the *AOR* to assist those who have some of our plants with just the parentage formula. There has been increasing interest in these colourful and easy-to-grow native hybrids. Note the colour variations within the same hybrid. By growing on large blocks of seedlings we have been able to select for unusual colours and unique colour combinations, which we are using for further breeding.

Open Day 2014

For the past few years we have opened the nursery (that is generally not open to the public) to coincide with our peak *Sarcochilus* blooming period. These have proved to be a very popular informal event, with most attendees taking home a flowering plant or two to add to their collections.

Our open day this year will start at 9.00am on Sunday 26th October 2014 and consist of a display of breeding stock, usually of around 200 plants. Sales are between 10.00am and 1.00pm when the greenhouse is open. We ask people to email with numbers where possible so we can cater enough coffee and cake. (This is most important!) Here is a unique opportunity to see a volume in full flower of the very latest in *Sarcochilus* hybrids in terms of quality, variety and colour. Last year we offered 5000 plants in flower as well as the latest in seedling flasks.

Hybrid *Sarcochilus* Culture

Flowering *Sarcochilus* plant care

Sarcochilus hybrids are excellent house plants while in flower. Water two or three times a week while inside a house or office as heating dries the plants out.

Long term care

Position: *Sarcochilus* are native to the Australian east coast. The plants are found in areas where moist air is prevalent. Often found in gullies and around creeks. This location means the plants have evolved (without pseudobulbs) to have reduced water storage, just in their fleshy leaves and roots.

Sarcochilus flower in spring and in order to initiate flower spikes a "chilling" is required during the short days of winter. This is not a problem where a plant is growing outside, however when grown indoors, with air-conditioning and a more stable environment, a drop in temperature will need to be applied. Medium level light is required for growth and to aid in flowering. As an indication the leaves should be upright and light green in colour to reflect adequate light levels, whereas broad flaccid, dark green leaves signify insufficient light.

Potting: Our plants grow in a mixture of Australian made Growool, perlite and styrene. This mix has been developed to give stability to the plant over many years of growth. It is in essence hydroponic. This mix will never need to be replaced, when the plant outgrows its pot simply slip it into a larger sized pot and fill the gap with a suitable mix.

Although this plant is in a pot, it is well suited to landscape use and will grow very well in a shaded rockery. Care must be taken to select a position that has sufficient light, is well drained (ideally the bed will be raised above the ground level with the addition of free draining material being recommended) and mulched. Keep slugs and snails away.

Water: While in flower and in a heated area watering should be carried out 2 or 3 times a week. When flowering is completed, watering may be reduced to twice weekly.

During the summer months watering should be increased to every second day. These recommendations obviously may need to be adjusted to suit the prevailing weather conditions.

Fertilising: Fertilising a plant is the last piece of information as it is the least important part of the information here, although it is important to get this aspect correct. Fertiliser is nutrient. Plants require a balanced diet of elements. These nutrients are supplied in the form of salts to the plant. If too much is applied then the plant cannot take up the nutrient nor can it take up any water. This will be fatal to the plant. It is much safer to under dose than overdo it hoping to make the plant grow better. Sick plants require less fertiliser and a strong dose will often finish them off.

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List of registered *Sarcochilus* hybrids – Barrita Orchids (2011-2014)

Grex	Pod Parent	Pollen Parent	Registered Date	Registered	Cross By
Bunyip	Heidi	Karen Ann	5/03/2011	Barrita	Whitney
Kulnura Absolute	Sweetheart	Bunyip	1/11/2013	Barrita	S Barrie
Kulnura Ballerina	Bunyip	Kulnura Dazzle	8/11/2013	Barrita	S Barrie
Kulnura Beauty	Cherie Snow	Cherie	1/11/2013	Barrita	S Barrie
Kulnura Berry	Kurumba	Kulnura Musk'	8/11/2013	Barrita	S Barrie
Kulnura Coral	Rebecca	Kurumba	1/11/2013	Barrita	S Barrie
Kulnura Dazzel	Glowing Embers	Elegance	10/07/2008	Barrita	S Barrie
Kulnura Dew Drop	Kirra-Lea	Sweetheart	9/05/2011	Barrita	S Barrie
Kulnura Dragonfly	Sweetheart	Elegance	30/10/2008	Barrita	S Barrie
Kulnura Emotion	Hot Ice	Kulnura Splash	1/11/2013	Barrita	S Barrie
Kulnura Euphoria	Kulnura Vibrance	Fitzhart	8/11/2013	Barrita	S Barrie
Kulnura Fancy	*hartmannii*	Kulnura Dazzle	8/11/2013	Barrita	S Barrie
Kulnura Festival	Elegance	Hot Ice	9/05/2011	Barrita	S Barrie
Kulnura Firemist	Zoe	Bunyip	1/11/2013	Barrita	S Barrie
Kulnura Flash	Kulnura Ripple	Kulnura Dazzle	1/11/2013	Barrita	S Barrie
Kulnura Gizmo	Zoe	Kulnura Dazzle	1/11/2013	Barrita	S Barrie
Kulnura Glimmer	Racheal	Heidi	1/11/2013	Barrita	S Barrie
Kulnura High	Madge	Bunyip	8/11/2013	Barrita	S Barrie
Kulnura Impact	Kurumba	Kulnura Vibrance	1/11/2013	Barrita	S Barrie
Kulnura Intensity	Elegance	Kulnura Ripple	9/05/2011	Barrita	S Barrie
Kulnura Iridessa	Cherie Dawn	Bunyip	1/11/2013	Barrita	S Barrie
Kulnura Joy	*hartmannii*	Madge	8/11/2013	Barrita	S Barrie
Kulnura Kaleidoscope	Kurumba	Bunyip	20/10/2013	Barrita	S Barrie
Kulnura Lady	Kulnura Ripple	Kurumba	8/11/2013	Barrita	S Barrie
Kulnura Lickedy	Cherie Dawn	Kulnura Ripple	1/11/2013	Barrita	S Barrie
Kulnura Maestro	Kulnura Vibrance	Rebecca	8/11/2013	Barrita	S Barrie
Kulnura Melody	Racheal	*hartmannii*	8/11/2013	Barrita	S Barrie
Kulnura Musk	Cherie	Elegance	10/07/2008	Barrita	S Barrie
Kulnura Passion	Sweetheart	Kulnura Dazzle	1/11/2013	Barrita	S Barrie
Kulnura Pebble	Sweetheart	*hartmannii*	1/11/2013	Barrita	S Barrie
Kulnura Periwinkle	Kulnura Ripple	Glowing Embers	1/11/2013	Barrita	S Barrie
Kulnura Ripple	Heidi	Canary	21/12/2009	Barrita	S Barrie
Kulnura Rosetta	Zoe	Elegance	1/11/2013	Barrita	S Barrie
Kulnura Ruby	Kulnura Dazzel	Kulnura Vibrance	8/11/2013	Barrita	S Barrie
Kulnura Rusty	Bunyip	Kulnura Ripple	1/11/2013	Barrita	S Barrie
Kulnura Salsa	Cherie Dawn	Kulnura Surprise	1/11/2013	Barrita	S Barrie
Kulnura Sanctuary	Heidi	Bunyip	1/11/2013	Barrita	S Barrie
Kulnura Scoop	Hot Ice	Tin Yin Lara	1/11/2013	Barrita	S Barrie
Kulnura Shades	Rebecca	Tin Yin Lara	1/11/2013	Barrita	S Barrie
Kulnura Smoothie	Glowing Embers	Zoe	1/11/2013	Barrita	S Barrie
Kulnura Songbird	Kulnura Ripple	Sweetheart	8/11/2013	Barrita	S Barrie
Kulnura Spice	Kulnura Dazzel	Kurumba	1/11/2013	Barrita	S Barrie
Kulnura Splash	Elegance	Heidi	10/07/2008	Barrita	S Barrie
Kulnura Surprise	Elegance	Fitzhart	10/07/2008	Barrita	S Barrie
Kulnura Sweetie	Cherie Snow	Glowing Embers	10/07/2008	Barrita	S Barrie
Kulnura Symphony	Elegance	Bunyip	1/11/2013	Barrita	S Barrie
Kulnura Twirl	Kulnura Ripple	Kulnura Musk	8/11/2013	Barrita	S Barrie
Kulnura Vibrance	Cherie Snow	Elegance	10/07/2008	Barrita	S Barrie
Kulnura Warrior	*hartmannii*	Bunyip	8/11/2013	Barrita	S Barrie
Kulnura Wild	Rebecca	Fitzhart	8/11/2013	Barrita	S Barrie
Kulnura Zephyr	Sweetheart	Kulnura Musk	1/11/2013	Barrita	S Barrie

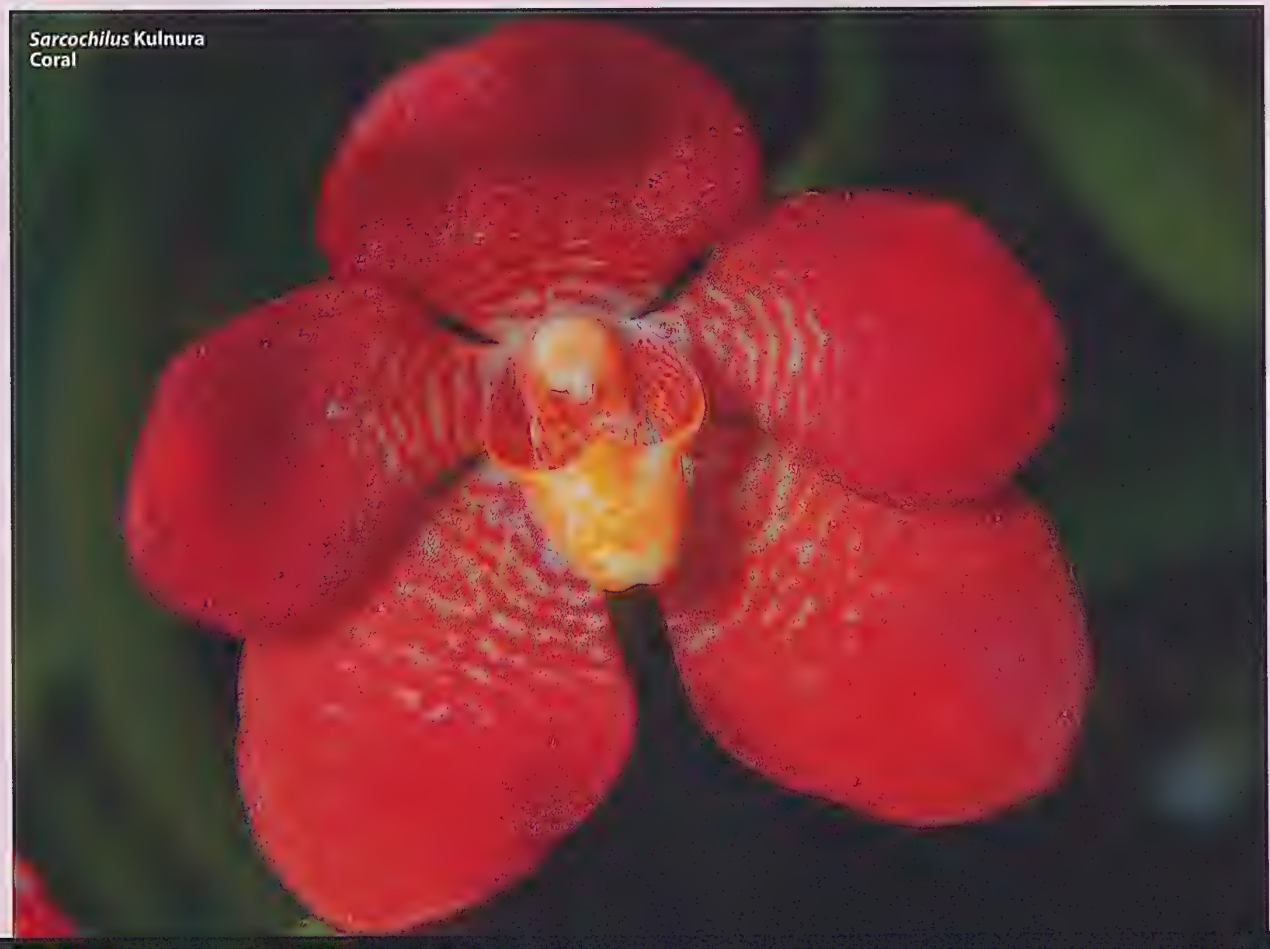
Sarcochilus Kulnura Sanctuary

Sarcochilus Kulnura Sanctuary

Sarcochilus Kulnura Passion

Sarcochilus Kulnura Dragonfly

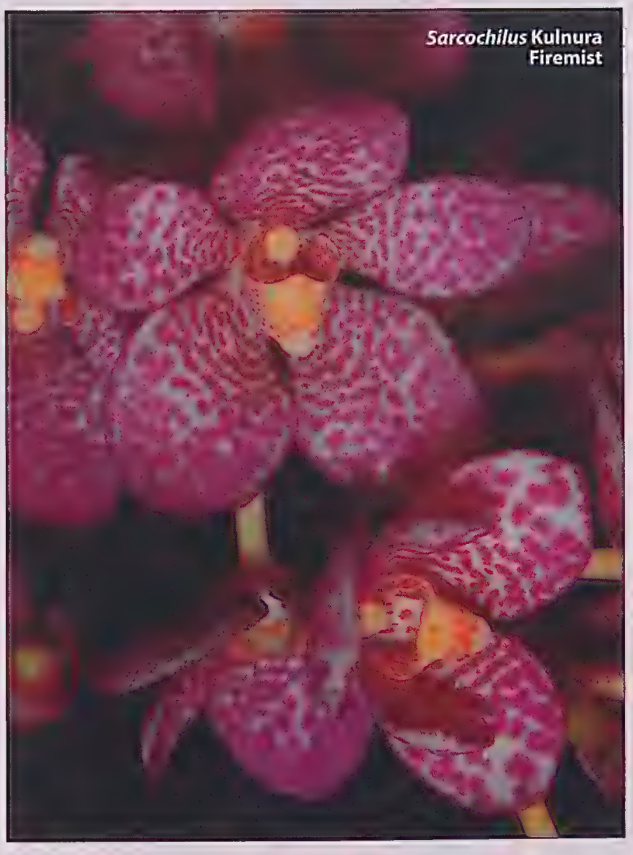
Sarcochilus Kulnura
Coral
(2 seedlings)



Sarcochilus Kulnura
Coral

Sarcochilus Kulnura Dragonfly

Sarcochilus Kulnura Smoothie


Sarcochilus Kulnura Firemist


Sarcochilus Kulnura Firemist


Sarcochilus Kulnura Gizmo


Sarcochilus Kulnura Sanctuary

Sarcochilus Kulnura Gizmo

Sarcochilus Kulnura Rosetta

Part of the block of sales plants for 2013 Open Day

These flowering plants are growing next to blocks of *Cymbidium* seedlings

Trays of *Sarcochilus* hybrids ready to be sent to supermarkets as flowering pot plants

Scott Barrie (left) and native orchid enthusiast John Roberts admiring part of the 2013 flowering season

Sarcochilus Kulnura Sanctuary

Some of Barrita Orchids breeding stock

Speculantha amabilis
from Ebor, NSW
(photo: L. Copeland)

Speculantha amabilis (Orchidaceae: Pterostylidinae), a new species of Tiny Greenhood from the Northern Tablelands of New South Wales

by David L. Jones and Lachlan M. Copeland

Abstract

Speculantha amabilis, a new species with affinities to *Speculantha rubescens*, is described from the higher parts of the New England Tableland, New South Wales. The species has a restricted distribution but is locally common and well conserved in two National Parks.

Key Words

Orchidaceae, *Speculantha amabilis*, *Speculantha parviflora*, *Speculantha rubescens*, new species, conserved, Australian flora, New South Wales.

Introduction

Speculantha was segregated from *Pterostylis* by Jones & Clements (2002) based on the following characters - dimorphic sterile and fertile plants; the leaves on fertile plants arising on a lateral shoot from the base of a flowering scape; multiflowered raceme; small flowers that face inwards towards the scape; erect synsepalum with short, more or less triangular free points that barely extend above the top of the galea; and, a diurnal semen-like floral odour which is sometimes strong. Additionally all species have a fleshy deltate stigma that is nearly as wide as long and is often situated towards the base of the column, and the labellum basal appendage is usually but not always tripartite.

Speculantha consists of 10 currently described species distributed along the east coast of Australia, including Tasmania and south-eastern parts of South Australia. Numerous additional undescribed species are known and the opportunity is taken here to describe a colourful new species from the Northern Tablelands of New South Wales.

Taxonomy

1. *Speculantha amabilis* D.L.Jones & L.M.Copel., ***sp. nov.*** With affinity to *Speculantha parviflora* (R.Br.) D.L.Jones & M.A.Clem. but differing by much larger rosette leaves, larger more brightly coloured flowers (bright red to bright reddish brown and white, deep red brown towards the apex, ageing reddish; green and white in *Speculantha parviflora*), scabrous dorsal sepal (smooth in *Speculantha parviflora*) and an oblong-obovate red and white labellum (narrowly oblong brown labellum in *Speculantha parviflora*). It also has affinities with *Speculantha rubescens* D.L.Jones but differs by its bright green rosette leaves (bluish-green in *Speculantha rubescens*) and different labellum shape (broadly elliptical in *Speculantha rubescens*).

Type: New South Wales. Point Lookout, New England National Park, 29 Jan. 1997, *R.G.Tunstall (ORG 549)* (holo CANB; iso MEL, NSW).

Illustration: Plate 246 in Bishop (2000), as *Pterostylis* sp. aff. *parviflora* (Ebor).

Description: Glabrous, tuberous, terrestrial *herb*. *Plants* 15-50 cm tall, not elongating in fruit. *Rosettes* developing late in anthesis, usually one, borne on a lateral growth from the base of the scape or on sterile plants. *Rosette leaves* spreading, 3-5 per rosette; lamina broadly ovate, 6-16 mm long, 3-12 mm wide, bright green; margins undulate to crenate; apex acute to apiculate; petioles 5-20 mm long, slender, narrowly winged. *Scape* slender, wiry, 1-10-flowered. *Sterile bracts* closely sheathing or spreading at the tips, 3-5, ovate-lanceolate, 7-16 mm long, 4-7 mm wide, acuminate. *Fertile bracts* closely sheathing, ovate-oblong, 6-15 mm long, 3-5 mm wide, acuminate. *Flowers* well-spaced, 1-4 open at once, 9-11 mm long, 3.5-5 mm wide, bright red to bright reddish brown and white, deep red brown towards the apex, ageing reddish, with a floral scent of semen; galea inflated at the base, erect before curving forwards in a semi-circle; dorsal sepal and petals of similar length. *Dorsal sepal* broadly ovate-lanceolate when flattened, 11-14 mm long, 4-6 mm wide, inflated at the base then tapered to apex, very boldly striped, acute to apiculate, strongly scabrous over most of its dorsal surface. *Lateral sepals* erect, closely embracing the galea; sinus stepped sharply inwards, flat with a median notch when viewed from the front, the area below bulging prominently when viewed from the side; conjoined part 7-10 mm long, 4-5 mm wide, narrowed to 2 mm wide at the base, scabrous along its margins and distal parts; free points erect or curved forwards, 2-2.5 mm long, tapered, acuminate, not reaching the top of the galea. *Petals* oblong, 9-11 mm long, 2.5-3 mm wide, strongly falcate, bright red to red brown with a few narrow white stripes, scabrous distally, acute to acuminate; flange c. 1 mm across, broadly deltate, obtuse, often crenate. *Labellum* erect, not visible through sinus in any position, slightly curved forwards near the apex, bright red and white. *Labellum lamina* narrowly oblong-obovate, sometimes slightly constricted below the middle, 3-3.7 mm long, 1-1.5 mm wide, obtuse; basal appendage decurved, c. 1.4 mm long, broadest at the base; apex trifid, erect. *Callus* a raised, central, bright red ridge c. 0.5 mm across. *Column* 5-6 mm long, curved away from the ovary at 50° at the base then erect, red brown. *Column wings* c. 1.6 mm long; basal lobe broadly deltate, c. 0.8 mm long, c. 1 mm wide, brown, at an angle 80°; apex broadly obtuse; inner margins adorned sparsely with short, white cilia; mid-section c. 0.6 mm long, brown; apical lobe obliquely erect or curved, filiform, c. 1 mm long, obtuse to acute. *Anther* c. 1.2 mm long, obtuse. *Pollinia* narrowly linear, c. 1.4 mm long, yellow, mealy. *Stigma* situated below the middle, scutiform, c. 1.5 mm long, c. 1.2 mm wide, raised. *Capsules* erect, narrowly ellipsoid, 8-11 mm long, 3-4 mm wide.

Distribution: Restricted to higher parts of the New England Tableland approximately 60 km east of Armidale. The largest population occurs at Point Lookout in New England National Park with several smaller populations scattered along the escarpment north-east to Barren Mountain. The southern limit appears to be Beech Lookout in Cunnawarra National Park, some 6 km to the south-west of Point Lookout.

Habitat: Most populations of *Speculantha amabilis* grow in tall, moist open forest dominated by *Eucalyptus obliqua, Eucalyptus nobilis* and *Eucalyptus fastigata*. Plants are also occasionally found in more open *Eucalyptus pauciflora* woodland with a dense grass layer of *Poa sieberiana*. The soils are always rich, well-structured red brown clay loams derived from basalt. Altitudes range from 1350-1550 m.

Flowering Period: Flowers have been recorded from December to April with the peak flowering period being February to March.

Recognition: Characterised by summer flowering period; rosettes appearing late in anthesis or after anthesis; bright green rosette leaves (to 16 x 12 mm); tall, wiry scape; sheathing sterile bracts; 1-10-flowered inflorescence; well-spaced flowers, 9-11 x 3.5-5 mm, bright red to bright reddish brown and white, deep red brown towards the apex; densely scabrous dorsal sepal, synsepalum and distal parts of the petals; sinus sharply stepped inwards, flat with a median notch when viewed from the front, the area below bulging prominently when viewed from the side; tapered free points that do not reach the top of the galea; and, an oblong-obovate, red and white labellum, 3-3.7 x, 1-1.5 mm, the tip not visible from the exterior in any position.

Speculantha amabilis has the most colourful flowers in the genus. The rich red to red brown and white floral combination, without any green colouration, is a reliable distinguishing feature. This species also has unusual column wings that narrow to a distinct basal stalk.

Similar species: A very distinctive species with obscure affinities. It has some similarities with *Speculantha rubescens* which has much larger, bluish green rosette leaves, green, white and red brown flowers and a broadly elliptical labellum.

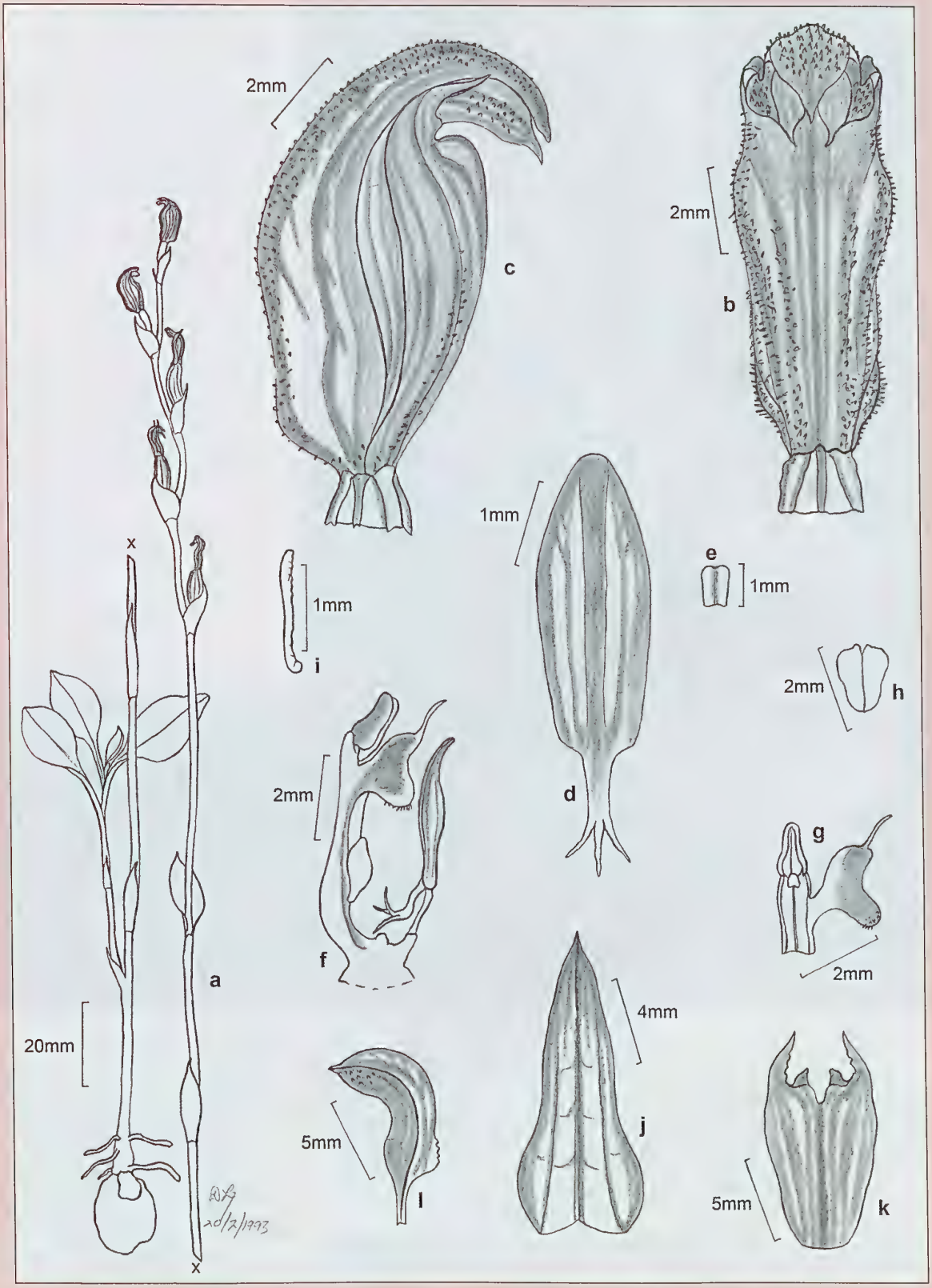
Notes: The flowers, which emit a semen-like scent during the day, turn a bright reddish colour as they age.

Conservation status: Of restricted distribution but locally common and well conserved in New England and Cunnawarra National Parks. There appear to be no threats other than occasional trampling and picking of flowers along the many walking tracks where it often grows. Although the total population is likely to number several thousand plants a ROTAP code of 2RCa is still warranted following the criteria of Briggs and Leigh (1996). *Speculantha amabilis* is unlikely to meet the criteria for listing as threatened on either the *NSW Threatened Species Conservation Act 1995* or the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*.

Etymology: The Latin *amabilis*, lovely, in reference to the attractively coloured flowers.

Additional specimens examined: NEW SOUTH WALES: Ebor, 15 Jan. 1963, *L.W.Archer* (NSW); New England Natl. Park, near Thungatti Camping Area, 2 Mar. 1994, *C.Bower (D.L.Jones 12851)* (CANB); Point Lookout, 12 Mar. 1970, *B.G.Briggs 3237* (NSW); 2 km W of Point Lookout, 12 Mar. 1970, *B.G.Briggs 3241a* (NSW); Cunnawarra Natl. Park, Beech Lookout, 7 Feb. 2005, *L.M.Copeland 3896 & I.R.Telford* (CANB, NSW); Point Lookout Area, New England Natl. Park, 18 Feb. 1993, *D.L.Jones 11366 & C.H.Broers* (CANB); Point Lookout, New England, 19 Jan. 1963 & 30 Jan. 1969, *I.Matthias* (CANB); Point Lookout, New England Natl. Park, 4 Feb. 1995, *P.Metcalfe (D.L.Jones 13824)* (CANB); New England Natl. Park, Berarngutta Picnic Area, 8 Feb. 2000, *P.Metcalfe (ORG 2925)* (CANB); Beech Lookout, Cunnawarra Natl. Park, 8 Feb. 2000, *P.Metcalfe (ORG 2929)* (CANB); Beech Lookout, Styx River State Forest, 31 Jan. 1988, *P.G.Richards 89 & P.H.Weston* (CANB, MEL, NSW); Point Lookout, 29 Jan. 1997, *R.G.Tunstall (ORG 549)* (CANB).

***Speculantha amabilis* from Ebor, NSW (photo: L. Copeland)**



Speculantha amabilis Point Lookout, NSW (D.L.Jones 11366).
a. flowering plant; b. flower from front; c. flower from side; d. labellum; e. labellum hinge; f. column and labellum from side; g. top of column from front; h. stigma; i. pollinium; j. dorsal sepal; k. lateral sepals; l. petal. © **D.L. Jones 20/02/1993**

Speculantha amabilis from Ebor, NSW (photo: L. Copeland)

Acknowledgements

We express appreciation to Anna Monroe and Emma Clifton for help with specimens at CANB; also the directors and curators at CANB, NSW and NE for giving us access to specimens. Special thanks to Jean Egan for preparing the drawings for publication, Mark Clements for access to photos of type specimens, Marion Garrett and Karina Richards for technical assistance.

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Rosette leaves of *Speculantha amabilis* from Point Lookout, NSW (photo: Gary Backhouse)

Caladenia pygmaea, the pygmy finger orchid validated at species level (after more than a century of being misunderstood)

by Robert J. Bates

Key Words: Australian and New Zealand *Caladenia*, *Caladenia carnea* var. *pygmaea*, raised to species status, non *Caladenia minor*, non *Caladenia pusilla*.

Abstract: *Caladenia carnea* R. Br. var. *pygmaea* R. S. Rogers is here formally raised to species status as *Caladenia pygmaea* and removed from synonymy with the also misunderstood New Zealand endemic *Caladenia minor* J. D. Hook. Colour photographs, detailed descriptions and a diagnostic key are provided.

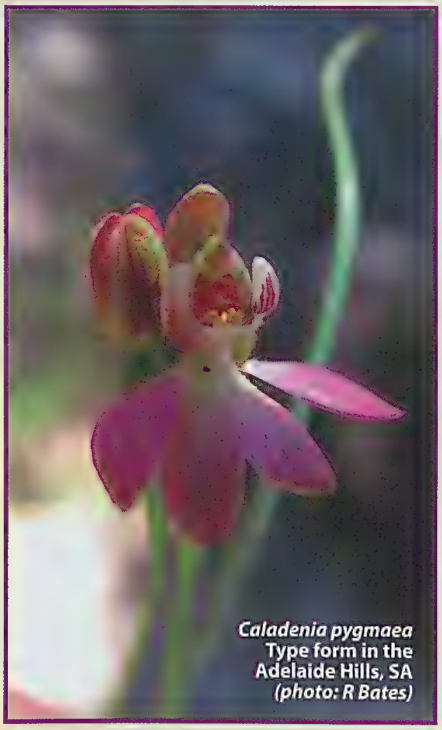
Materials and Methods: Type descriptions and other relevant material was read and interpreted. Type collections and images of types at AD and Kew were examined.

Plants of *Caladenia pygmaea* were located at numerous sites in the wild in south-eastern Australia including the type location at Scott Creek. *Caladenia minor* was searched for unsuccessfully in New Zealand. Digital images were made of this and similar taxa such as *Caladenia pusilla* and *Caladenia mentiens*. An expanded description and key were prepared as part of an ongoing study of small *Caladenia* spp in Australia.

Introduction: This tiny pink orchid named by South Australian orchidologist R. S. Rogers from plants he collected (with Mrs Rogers) in the Adelaide Hills in 1903 was published in the *Trans. and Proc. Royal Soc.* South Australia in 1927. Rogers when naming it *Caladenia carnea* var. *pygmaea* wrote "only a dwarf variety as it grows amongst normal *Caladenia carnea* which are 10 to 15 inches (30cm) high. Today the fact that the two often grow together, without intermediates, tells us they are separate species, not varieties or subspecies.

Images: Bates & Weber 1990, plate 61 as *Caladenia pusilla* from south of Adelaide.

Three images are included with this paper. The first is of plants near the type locality in the Adelaide Hills, South Australia; the second is of a small Sandplain form from Big Heath Conservation Park in South Australia, whilst the final image is of true *Caladenia pusilla* Curtis which has sometimes been confused with *Caladenia pygmaea*.



Caladenia pygmaea **Type form in the Adelaide Hills, SA (photo: R Bates)**

Taxonomy:

***Caladenia pygmaea* (R.S. Rogers) R. J. Bates stat. nov.**, (Basionym *Caladenia carnea* var. *pygmaea* R.S. Rogers (1927), based on the collection: South Australia, Southern Lofty region, Scott('s) Creek 15th Nov. 1903, R.S. Rogers 318. *Lectotype* at AD designated by M.A. Clements (1989) is here removed from synonymy with *Caladenia minor* J.D Hook. This latter synonymy suggested by Clements (lc) has not received general acceptance in Australia. Barker et al (2005), Jones (2006), Backhouse & Jeanes (2006), and Bates (2008) do not treat *Caladenia minor* as an Australian species and hardly mention *Caladenia carnea* var. *pygmaea* or its synonym *Petalochilus carnea* var. *minor*. Kuiter (2012) and Bates (2013) both used the name *Caladenia pygmaea* as a *nomen nudum* without explanation.

Further notes on Taxonomy:

Hooker, (1853) described his *Caladenia minor* as 4-6 inches tall (11-16cm), somewhat taller than *Caladenia pygmaea* and artist W.H. Fitch's accompanying illustration shows a more slender plant with narrower segments than *Caladenia pygmaea*.

The Type collection of *Caladenia minor* at Kew (seen 2002) i.e. 'New Zealand; Northern Island, dry clay hills' Edgerly s.n.' (The lectotype specimen (a) was designated by M.A. Clements in 1989). The type sheet also contains material of *Caladenia alata* and perhaps *Caladenia chlorostyla*. Hooker (1853) described the flowers as pink but as he saw only dried material this information may have come from the collector Edgerly who could have been referring to the pink flowered *C alata* R.Br. in the same collection. From my own observation of the types it was not possible to discern the flower colour.

New Zealand orchidologist Ian St George stated (2002), that no one in New Zealand was sure to what plant the name *Caladenia minor* really applies. In contrast we have no such trouble with *Caladenia pygmaea* in Australia.

Description of *Caladenia pygmaea*:

A dwarf species 5-10 cm tall, with very slender scape and a single, slightly hairy, linear, erect leaf, usually 2-3 cm long and 2-3 mm wide. The single flower is 5-6 mm wide, pale green and slightly hairy outside, pale pink inside, with red transverse bars on the labellum; sepals and petals rounded, 2.5-3 x 2-2.5 mm, outer surface of sepals greenish, inner surface pale pink (see images), dorsal sepal similar, strongly hooded over the column, petals pink, spreading, with a slender base, lateral sepals similar, broader, often conjoined at the base, held horizontally in front of the flower and often touching for most of their length; labellum strongly trilobed, pink or white to 3 mm x 2 mm, the side lobes very erect, almost clasping the column, lamina with transverse red bars of colour and with two rows of slender golden calli to 0.6 mm tall. The minute, triangular, decurved, yellow labellum mid lobe, just 0.8 mm x 0.5 mm is somewhat irregular with few marginal teeth or calli. The curved, 1 mm long, finger-like column, sheltered by the dorsal sepal is green and white with an ovate stigma and pink anther cap ending in a minute mucro. The flowers are self pollinated and only last a few days, the ovoid seed capsule about 2 mm long and rapidly maturing.

Distribution and habitat:

Caladenia pygmaea is a dwarf woodland species of harder soils and in the strict sense appears restricted to the well watered Southern Temperate regions of South Australia and perhaps Victoria. Plants prefer open, well drained sites where they shelter amid tiny sedges. A smaller form occurs in open sandy heath.

Recognition: This species can be discerned by the soft pink flowers with short rounded sepals often partly conjoined, the greenish tinges on the outer surface of the sepals, (see images), and the very narrow, short leaf. Even smaller plants from heathy flats throughout southern South Australia and Victoria are likely to be a separate subspecies but for now are treated as the same taxon.

Flowering time: *Caladenia pygmaea* flowers in October.

Caladenia pygmaea
Big Heath
Conservation Park, SA
(photo: June Niejalke)

Key to the tiny pink *Caladenia* of South-eastern Australia:

1: flowers not expanding	*Caladenia cleistantha*
1: flowers expanding, even if only for a day or two	2
2: leaf linear, usually 20-30mm long and 2-3mm wide, flowers mostly less than 6mm wide, inner surface pale pink, outer surface pale green	*Caladenia pygmaea*
2: leaf linear lanceolate, mostly longer than 30mm, flowers more than 6mm wide, in various shades of pink or purplish inside, purplish, red or brown on outer surface	3
3: plants mostly 25-40cm tall, floral segments with acuminate, subulate points	*Caladenia 'subulata'*
3: plants mostly less than 25cm tall, segments rounded or shortly acute	4
4: plants often short, with thick scapes usually 1.5-2mm in diam, flowers usually less than 10mm wide, dark brown outside (plate 3), deep tones of pink or purple inside, segments blunt, variable in size	*Caladenia pusilla*
4: plants tall, slender, scape usually 1-1.5mm diam, flowers more than 10mm wide, in various shades of pink or even white, segments mostly acute	5
5: plants often exceeding 25cm tall, flowering November to January, with narrow but blunt segments, labellum margins with calli	*Caladenia vulgaris*
5: plants usually less than 20cm tall, flowering October to mid December, segments broad but well separated, apex rounded, labellum narrow	*Caladenia mentiens* complex

Further notes on *Caladenia pygmaea*:

As *Caladenia pygmaea* has not, or rarely appeared under any name in any State Flora or major orchid book since 1990, one might think it had been forgotten. It has however appeared informally in several smaller books such as Kuiter's 2012 booklet on small *Caladenia* without explanation.

Climate change has perhaps changed the flowering times of *Caladenia pygmaea*: Rogers collected the type on November 15th 1903, but today flowers open about a month earlier

My own observations on tiny pink *Caladenia* throughout South Australia and western Victoria indicate that there are several entities which remain undescribed or at least have no valid name. See Bates 2008-2013 for images of some of these. They will be dealt with in forth-coming publications. *Caladenia pygmaea* itself seems to contain a number of distinct subspecies.

Conservation status: at present this species is not rated and appears widespread and locally common.

Acknowledgements:

Many thanks are due to members of the Native Orchid Society of South Australia who assisted with collections and images of small pink *Caladenia* in South Australia; particularly June Niejalke who provided images for publication.

I am also grateful to staff at the State Herbarium of South Australia (AD), particularly Juergen Kellermann who made collections available for viewing and to the library manager Lorae West. Thanks also to staff at Kew 2002 and to Ian St George of the Wellington Native Orchid Society for passing on his extensive knowledge of the tiny *Caladenia* of New Zealand.

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Caladenia pusilla
(photo: June Niejalke)

Paphiopedilum sangii is a distinctive slipper orchid species that was described by Guido Braem in 1987, from plants collected on the island of Sulawesi. This seed-raised plant, grown and exhibited by John McAuley, was displayed at the 2014 St. Ives Orchid Fair. *(photo: David Banks)*

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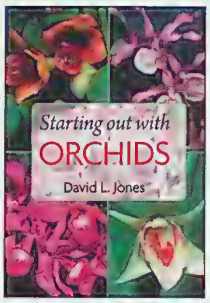

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by David L. Jones

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Part Two discusses the orchids themselves with concise information on each species. They are grouped primarily according to climatic requirements, starting with cool growing orchids progressing to the warm growers, in alphabetical sequence first with terrestrial genera, followed by the epiphytes. Both Australian and exotic species are treated together. For each entry there is specific detailed information on each species, as well as a simple table giving the basic cultivation needs and flowering season. A glossary is also included to explain unfamiliar terms.

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ORCHIDS OF WESTERN AUSTRALIA

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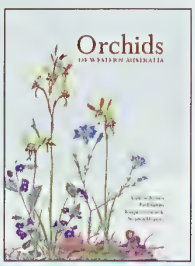

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by Robert Friend

It sounds too good to be true, but orchids are as easy to grow in the backyard as a lawn or a bed of roses. Despite their exotic reputation, the everyday gardener can grow orchids without special pots or greenhouses.

The book shows you haw to introduce orchids into the garden, by attaching them to trees, fixing them on rocks and walls, or planting them in garden beds. With more than 150,000 species and hybrids of orchids in the world, there are plants suitable for every garden.

Robert Friend draws on a lifetime's experience with orchids to explain how to choose the right orchid for your climate and how to landscape orchids in different types of gardens. Ranging from tropical to cool climate areas, from large acreages to small courtyard gardens, almost every backyard can enjoy the best of one of nature's wonders.

144 pages.
Colour and B&W.

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THE ALLURE OF ORCHIDS

by Mark A. Clements

From 1788 when First Fleet artist George Raper painted *Diuris punctata*, the botanical world has been fascinated by Australian orchids. Hundreds of orchid images from the National Library of Australia's collection, with words by Mark Clements from the Australian National Herbarium in Canberra, make *The Allure of Orchids* a must-read for lovers of flowers, original paintings and our indigenous orchids. Many of these unique botanical illustrations are being showcased to a wider audience for the very first time.

The Allure of Orchids features an essay by internationally recognised orchid expert Mark Clements, accompanied by a portfolio of illustrations, both historical and modern, of this alluring species. In it you will find works by around 25 artists, including the extraordinarily detailed lithographs of early botanical illustrator Ferdinand Bower, Ellis Rowan's beautiful paintings, the delicate watercolours of Margaret Cochrane Scott, and many more.

The Allure of Orchids is divided into two parts; Terrestrial or ground orchids and Epiphytic or tree dwelling species. Clements says, "These illustrations can be enjoyed simply as works of art and part of our rich and colourful Australian illustrative heritage. But, significantly, they are also part of the scientific record of this country, particularly during the early exploration of the continent."

Interestingly, a lot of the old and traditional Latin botanical names have been used in this work. The author makes a significant number of anecdotal notes and comments throughout the book, to keep the reader fully informed. It is a "must have" book for those interested in Australian orchids and historical botanical art.

159 pages, colour.
284mm x 233mm.
Hardcover.

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ORCHID: THE FATAL ATTRACTION

by Anne Ronse

SOLD OUT

The subject of orchids is one close to the heart of many floral designers. some feel it's a privilege to work with these flowers and plants but wonder how many designers investigate the subject rather than just use them. The text by Dr Anne is informative and enthusiastic and the photography is superlative! It's so good that the flowers literally drip off the pages capturing the imagination and the heart. If you want something special, are addicted to orchids and want to luxuriate in glorious text and images; this is the book for you.

142 pages. Colour. Hardcover.

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THE WORLD OF ORCHIDS – 2

The World of Orchids – 2 has been written by members and friends of the North Shore Orchid Society about orchids grown in Sydney and its environs, and we are indebted to those people for their time and effort.

It has been produced to cover a large range of genera to help not only the novice, but also the experienced grower in their present fields of interest, and to tempt and encourage them to try other genera.

It should be pointed out that the methods of culture used by the authors are those which they themselves have found successful. Growers should try any changes to their own culture gradually and on a few plants first, as orchids respond differently under different conditions.

80 pages. Colour and B&W.

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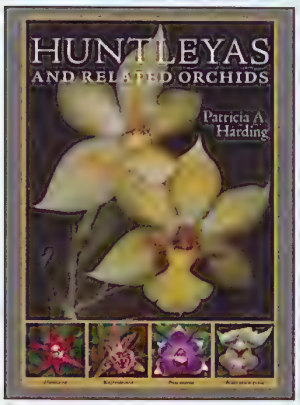

HUNTLEYAS AND RELATED ORCHIDS

by Patricia A. Harding

Revered by avid orchid collectors for its delightful, star-shaped flowers, *Huntleya* is a small group of orchids found low in the forest. *Huntleya* is a small orchid genus that includes fourteen species. They occur in wet cloud forests at medium altitudes of Guatemala, Costa Rica, South America down to Bolivia. The type species *Huntleya meleagris* also occurs in Trinidad. Besides their striking colours — from deep blue to waxy red, royal purple to almost black — flowers of this group are known for their distinctive shapes, patterns, and textures. As appealing as these lovely tropical orchids are, their identification has been confused since the first species was described in the mid-1800s. Recent DNA studies have led to a clearer understanding of relationships and, as a result of this clarity, it is now possible to sort out the taxonomic problems and identify the characteristics that set species apart. In this first book devoted to the *Huntleya* alliance, author Patricia Harding presents evidence from the scientific literature, other growers, and her own experience that will enable orchid enthusiasts everywhere to identify their plants and grow them successfully. Patricia A. Harding is an accredited American Orchid Society judge who has been growing and photographing orchids for three decades.

260 pages, 150 colour photos. Hardcover.

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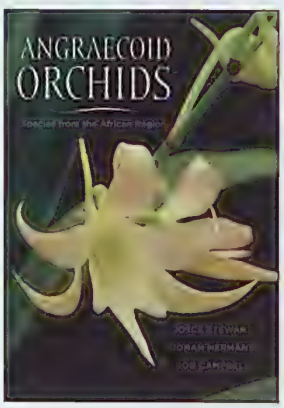

ANGRAECOID ORCHIDS:

Species from the African Region

by Joyce Stewart, Johan Hermans, and Bob Campbell

These so-called 'Jewels of Africa' with their sparkling flowers, distinctive growth habit and floriferous nature are much prized and this account, the first to include the Angraecoid orchids of both Africa and Madagascar, is long awaited. It brings together, in a single volume, descriptions of all 690 species in this intriguing group of orchids and will be the essential reference for all Angraecoid orchid enthusiasts for years to come. Including such horticulturally important genera as *Angraecum*, *Aeranthes*, *Aerangis* and *Jumellea*. Stewart, Herman and Campbell have all spent time in various parts of eastern and southern Africa and precise ecological information relating to habitat, altitude preferences and flowering season of individual plants will be particularly helpful to growers. The diagnostic features of each genus are illustrated and over half the species are accompanied by exquisite photographs taken in both wild habitats and in cultivation.

432 pages, 290 colour photos. 185mm x 265mm. Hardcover.

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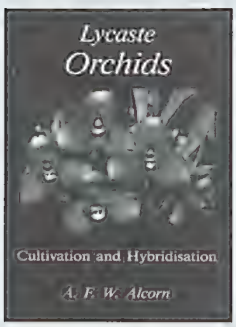

LYCASTE ORCHIDS -

Cultivation and Hybridisation

by A.F.W. Alcorn

Lycaste orchids are easy to grow, and they produce flowers that range from the beautiful to the bizarre. No book previously has provided detailed cultural requirements of the Lycaste, and this book should fill that gap, and encourage new growers to take up the cultivation of this beautiful genus. A section on hybridising contains valuable information on inheritance and genetics that will benefit any hybridiser, not just the grower of Lycastes, as well as helpful hints on how to avoid pitfalls in your hybridising program. Michael Hallett, a friend of Fred Alcorn for a number of years, co-wrote this book with Fred and has completed it posthumously. He has a background in genetics, research and botany, and a passion for plants, especially orchids.

237 pages. Colour and B&W.

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MASDEVALLIAS:

Gems of the Orchid World

by Mary E. Gerritsen and Ron Parsons

For the species orchid enthusiast, cool to intermediate orchid grower, or anyone simply "mad about Masdevallias," this is a first complete reference to these collectible new world orchids. An inspiring tribute to their beauty and a practical guide to their care, the book offers detailed advice on all aspects of culture. For those enthusiasts who are up to a challenge, chapters on propagating, showing, and registering Masdevallias are also included. Ron Parsons is one of the finest nature photographers in the world and has an encyclopaedic knowledge of species orchids, with the genus *Masdevallia* being one of his favourites.

300 pages, 149 colour photos. 190mm x 255mm. Hardcover.

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Orchid Road Test

Test and photos by Sam Cowie

Miltoniopsis Lillian Nakamoto 'Tanto'

This is one of the best *Miltoniopsis* for beginners and also one of the more unusual ones for its flowering. After growing Tanto for the last six years I've found it to be one of the most tolerant *Miltoniopsis* for the summer period in South-East Queensland. This plant will happily keep growing during December and January before its main flowering season from late January through to April or May. Now those of you that grow *Miltoniopsis* will straight away notice that this flowering season is very different from the majority of *Miltoniopsis*, which is August through to December. Having said that, I did notice one Tanto flowering in the greenhouse in August, but that is another great trait with the plant, it will spot flower year round it seems.

Tanto is such a standout flower that a photo of it has already appeared in the *Australian Orchid Review*, when the Editor spotted one at a society meeting. That pure white flower with the black eye is just an eye catcher, and the light rose fragrance will enchant you. You will occasionally see Tanto's with a little bit of pink blush above the black eye, this usually occurs if the flowers have developed during the cooler months of the year.

Bred by Mr Hajime Ono of Hawaii in 1994, it's a cross between *Miltoniopsis* Lorene and *Miltoniopsis* Lynne Waihee. Mr Ono picked up an AQ award from the AOS for a display of 13 seedlings from the cross, of which two on the night received Awards of Merit (AM).

Tanto prefers a coco/perlite potting mix that retains moisture between watering but is free draining, as the last thing you want to do is sit a *Miltoniopsis* in water. *Miltoniopsis* do very well where their roots are kept cool during the summer months and have plenty of humidity around them, so the pot in pot technique is recommended. Pot in pot is where you place a terracotta pot (larger than your specimen orchid pot) in a tray of water, and then fill the inside of the terracotta pot with gravel, on which is placed your specimen orchid pot above the water level. The water will evaporate up through the terracotta pot and keep the roots cooler and surrounded by very high humidity, something that *Miltoniopsis* love. They also don't like to be out in the rain, so are best in a covered greenhouse or growing location.

Now this plant was taken out of production due to one grower complaining that it was very susceptible to botrytis, something that hasn't occurred with our plants. So after a bit of jumping up and down, it's now back in production. We have noticed one problem with Tanto over the last winter, during an extended period of cold nights down to 5°C, semi-mature growths developed cold-spot damage on the developing leaves in the centre. This hasn't affected the plants continued growth.

Now those of you that already have Tanto, be grateful, as we are down to our last stocks and are eagerly awaiting the next flask shipment. Those of you that know someone that has one, tell them you're their best friend. The photos are of our specimen plant in a 175mm Port Pot.

Sam Cowie
Kin Kin, Queensland

Australian Orchid Review

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2014 ORCHID EVENTS – *What's on!*

September 19-21 Tasmanian Orchid Conference – Launceston, Tasmania

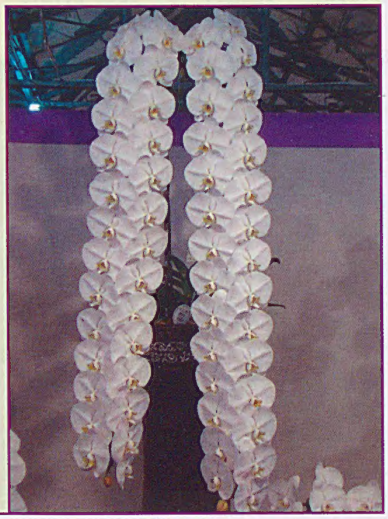
September 28 Hills District Orchids – Spring Open Day – Northmead, NSW

October 3-5 Southern Orchid Spectacular – Caringbah, NSW

October 18-19 Species Orchid Show – Mount Coot-tha Botanic Gardens, Queensland

October 23-25 Northern Rivers Orchid Species Society – Lismore Shopping Centre, NSW

December 7 Hills District Orchids – Summer Open Day – Northmead, NSW



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Orchid growth in *Pinus radiata* bark

Comparative photo from Orchid growing substrate trial conducted at Lincoln University, New Zealand April, 2012.
(Photo unaltered)

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